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Portes-Cochères.

NO English traveller who has ever crossed the Channel can fail during his first visit to Paris, or for the matter of that to Boulogne, to have been struck with the singular difference in the appearance of the French or Belgian house-fronts as compared with those at home; and the feature of the large *porte-cochère* or carriage doorway is certainly sufficient in itself, were there no other dissimilarities, to attract even the most unobservant eye. That strange and characteristic outcome of our English domestic civilisation known as the area, and the perhaps even more marked feature, with all its London associations, of the "airey railins,"—for as such are they familiar to your thoroughbred Cockney,—have no existence on the other side of the Channel. Those who know their Paris well, can, it is true, recall the Rue de l'Élysée which overlooks so pleasantly the stately garden of the present home of the President of the French Republic. Here there is so decidedly an English look about the houses that it is evident the late Emperor had some idea of introducing into his capital something of the domesticity of the city among whose people he had passed so many happy years of his life. There is a distinct smack of Belgravia, of, say, Wilton-place, about the Rue de l'Élysée; but let us hasten to note that the innovation did not seem to meet with favour, and the more palatial style of the older houses in the neighbouring aristocratic thoroughfare of the Faubourg St. Honoré, with their stately and exclusive *portes-cochères*, has continued to reign supreme in spite of attempted changes.

To all who know Italy, the French *porte-cochère* is clearly only the modernised *portone* of every Italian *palazzo*, adapted to their use by the French, as one of the many other refinements of the classic peninsula, which, in days gone by, was the great arbiter of taste. And the French architects have wisely, throughout all the changes of style within the last three centuries, seen the advantage, pictorially and practically, of the central carriage-way known as the *porte-cochère*. When we say central, we are in a measure incorrect, for there exists no rule as to its position in the façade; though it is on the design of the *porte-cochère* that largely depends the variety of that uniformity of which careless English travellers are so fond of accusing the street architecture of Paris. In few features do the French architects show more their acquaintance with the details of their profession, and their knowledge of the pictorial value of the *porte-cochère*, than in the treatment of this important element of the façade.

Always, of course, putting aside the Boulevard de Sebastopol, one of the first of the modern thoroughfares laid out in Paris, and at a period when French taste had certainly arrived at literally a dead level of monotony, and yet, curious to say, a *boulevard* always pointed to when French streets are spoken of, always, we repeat, putting aside such an example, let any visitor to Paris stroll along the Boulevard St. Germain, the most modern of the great thoroughfares of Paris, or let him walk along the Boulevard Malesherbes or the Boulevard Hausmann, or even a very much more working thoroughfare, such as, say the Boulevard Henri Quatre, and he will have ample opportunities for observing the nature of the *porte cochère* as it is treated by the modern French architect. It is a singular feature of this characteristic detail in the façade of a foreign house that it will be found not alone in the aristocratic neighbourhoods; throughout the capital in almost every *maison de rapport*, where even such comfortable rents as 30*l.* a year for a second or third floor *appartement* are paid, the *porte cochère* exists also, as a matter of course, and very skilfully is its introduction into the plan considered.

The method in which a town-house is laid out by the French architect offers a most singular contrast to the method which prevails in our English towns. In the first place, all those tacitly accepted traditions of the necessity for the kitchen being downstairs, with unvarying accompaniments of back kitchen, scullery, larder, pantry, &c., coal-hole and dust-bin, with the equally traditional necessity for the front and back parlour, and dining-room, conveniently opening out of the hall ascended to by the obligatory flight of steps (those front steps which the mistress with two or three servants finds the cook of the present day growing more and more unwilling to "do down"); all these and many other universally accepted conditions are unknown to the French architect. His conditions, however, if not quite so stringent, are very conveniently determined. The ground-floor is the property of the porter or *concierge*, whose *loge* forms a conspicuous feature in the plan of the *porte cochère*, yet never interfering with its essentially carefully-considered architectural beauty of detail. The *loge* of the *concierge* is always a charming little retreat; a stranger might be tempted rashly, perhaps, to envy M. Pipelet and his wife their pleasant home with its clean muslin curtains, its pretty plants and general tidiness, but we are bound to admit that when one falls into foreign ways,—bad habits some might term them,—one comes to understand to some extent, notwithstanding the many services the porter is able to render, that antipathy which seems to exist on the part of the public at large for the guardian of the door, in consideration of the fact that the door all day remains wide open,—let us rather say doorway,—to keep which scrupulously well swept, the *boîte aux ordures* (the French equivalent for our dust-hole) emptied every morning, the green plants in the yard (mostly shrubs in boxes) in good order, and every piece of brass, especially the handsome water-tap, in a chronic state of brilliancy, the oak staircase well swept and waxed, comprise the duties which, even in the most out-of-the-way neighbourhoods, every *concierge* who respects him or her self takes a pride in fulfilling.

In plan the *porte-cochère* of course takes up a large share of the ground-floor, which, however, it may be remarked, is by no means as exclusively used for domestic purposes on the Continent as is the case with us; a fact, doubtless, traceable to the Mediæval traditions of the days when the ground-floor,—as we see in most of the older Italian *palazzi*,—required to be more a fortress than a comfortable home.* The fact, however, of the *porte-cochère* taking up so much of the ground-floor is often most ingeniously compensated by making the space to the right or left of the doorway, as the case may be, into an excellent shop. This, of course, is in those thoroughfares where the presence of shops is not objected to; but it is curious abroad generally to notice how few of such prejudices, so common in England, exist. Here, again, we can see the evidence of the traditions of Italy, where the princely *palazzo* and the humble *bottega* will be found shoulder to shoulder, often, indeed, practically under the same roof. When the introduction of the shop into the ground-floor is not necessary, there are always numerous other alternatives, the adoption of which it will be found gives to a line of foreign houses so much of that variety of character, of "style," in a word, not unjustly found wanting in most of our uniformly-built thoroughfares. In those houses, which, like our own, are exclusively occupied by the owner,—often, indeed, in those occupied by a number of tenants,—the yard at the back into which the *porte-cochère* opens has planned round it the stables and coach-house, an admirable arrangement of which we have more than once spoken in these columns.

We English are justly accused of showing no small degree of exclusiveness in our modes of existence. With a knowledge of this peculiar trait in our character it has always seemed to us strange that the *porte-cochère* should never have acclimatised itself in England. The successful manner in which as a carriage drives up and disappears across the pavement under the dark archway of the *porte-cochère* in a foreign house, landing the visitor, or the

* It is most interesting to trace how singularly such conditions as these, dictated by the historical necessities of past existence in the great foreign cities, have had their direct influence upon modern domestic architecture abroad, conditions which amply suffice to explain those numerous differences which exist between our ideas on such points and those of our Continental neighbours.

master, at the foot of the staircase, undisturbed by the gaze of the public, and dryshod in the wettest weather, has always appeared to us a most attractive feature of the *porte-cochère*, and one which it seems would singularly recommend its adoption in our country, especially to that very numerous section of our community with whom exclusiveness has crystallised into a positive tradition. There cannot possibly be imagined a greater contrast between this system and that which exists with us, where the carriage drawing up at the side of the pavement often obliges the visitor to walk a considerable distance to the doorway. No contrivances of awnings or carriage-carpets can ever be anything but clumsy in comparison with the *porte-cochère*. It is impossible to exaggerate the danger of ladies in evening dress stepping from their carriage across a wide pavement to the open door.

It might possibly be argued against the *porte-cochère* in England, as it is against many foreign features, that our climate is not adapted to its use. We fail, however, to recognise this argument. Throughout Germany, in cold Munich, in wintry Berlin, in Brussels, in Ghent and throughout Belgium, in icy Vienna, in Paris, all with climates differing after all very little from our own, and certainly visited with winters much more severe, the use of the *porte-cochère* is universal. A very simple arrangement in winter, of double doors at the foot of the staircase which opens directly on to the *porte-cochère* entirely obviates all possibility of cold draughts.

But the chief objection to the *porte-cochère* in England will ever simply remain the necessity, attendant on its introduction, of an entire and absolute change in the traditional plan of the house as understood by the English public. Good-bye, as a matter of course, to the well-beloved hall, redolent of so many recollections, but more often of the odours from the basement kitchen; good-bye to the essentially British idea of the front door and all its associations, and that very general feature, endeared to us all, of the dining-room on one side and the drawing-room on the other, with those concomitant advantages of the family hearing all that is proceeding at the front door; good-bye to the pleasant thunder of the knocker and the tinkling of the "visitors'" or the "servants'" bell; good-bye, in many cases, to that so essential and eminently useful feature of a town-residence,—the front garden,—happy hunting-ground of the intruding terrier and the domestic "Tom"; good-bye to that convenient receptacle of so many scraps of paper, the kitchen-area, the picturesque railings, the romantic back-door, and the dust-hole; good-bye, in fact, to many another feature of our comfortable *bourgeois* existence, with its well-organised routine in which we have been trained up from father to son; good-bye, in fact, to many of the elements of that British home-life, the enjoyment of which we are so fond of boasting we possess in so much higher a degree than the "foreigners." And yet, with our knowledge of all these facts, we cannot give up a belief that a small effort of ingenuity on the part of some young architect might lead to the introduction into our English houses of many of the good features of the foreign *porte-cochère*.

ARCHITECTURE AMONG THE POETS

(*Concluded*).*

OUR poet-laureate of to-day has a keen sensitiveness to beauty of colour and detail in architecture, although the references to the art in his writings are not so frequent as might have been expected from his obvious power and pleasure in word-painting. Their tendency however, is very marked; they are the complete opposite of the cold and classic taste of the last century. Tennyson is entirely of the "romantic" and Mediæval school in his artistic leanings; and while Gray referred in a half-satirical sense to

> "Rich windows that exclude the light,"

we feel that such windows would be a source of keen enjoyment to our contemporary poet, and that the fact of their unpractical character in "excluding the light" would weigh for little or nothing with him. The whole of the gorgeous interior imagined in his "Palace of Art," is, in fact, a building to exclude the light; and though ostensibly the poem points a moral against doing so, we feel that the poet enjoyed the building of this sinful aërial palace none the less. His "four courts" within the precincts of the palace remind one a little of Bacon's provisions for the pleasaunces of his ideal palace.*

> "'Four courts I made, east, west, and south, and north;
> In each a squared lawn, wherefrom
> The golden gorge of dragons spouted forth
> A flood of fountain foam.
>
> And round the cool green courts there ran a row
> Of cloisters, branch'd like mighty woods,
> Echoing all night to that sonorous flow
> Of spouted fountain floods."

This seems like a kind of idealising of some of the Cambridge cloisters. In the interior of his palace he is conscious of the pleasure in the cool seclusion of over-arching enclosure which has always been one of the attractions of internal architectural effect to sensitive and imaginative minds,—

> "Full of long-sounding corridors it was,
> That over-vaulted grateful gloom,
> Through which the livelong day my soul did pass,
> Well pleased, from room to room;"

and one touch about the stained glass windows is admirable,—

> "The deep-set windows, stain'd and traced,
> Would seem slow-flaming crimson fires—"

the epithet "slow-flaming" giving a kind of mysterious life to the window colours, without disturbing the deep repose of the scene.

From amid the strange scenery of the "Idylls of the King" there peer out picturesque bits of antique tottering architectural remains, imagined as the relics, in those old days, of days still older. The poet's eye for picturesqueness of detail is shown in the description of the half-ruined castle in which Geraint first met Enid; a bit of effect which always reminds us of a certain etching of Albert Dürer's, where a great heavy war-horse is seen, foreshortened, standing amid odds and ends of detail,—

> "Then rode Geraint into the castle court;
> His charger trampling many a prickly star
> Of sprouted thistle on the broken stones,
> He look'd and saw that all was ruinous.
> Here stood a shatter'd archway plumed with fern;
> And here had fallen a great part of a tower,
> Whole, like a crag that tumbles from the cliff,
> And like a crag was gay with wilding flowers;
> And high above a piece of turret-stair,
> Worn by the feet that now were silent, wound
> Bare to the sun."

The imagined aspect of Camelot, the ancient city which had been built by heathen kings before Arthur conquered, seems to have clung very much round the poet's imagination in later years. In an early poem, "The Lady of Shalott," he refers to it merely as "Towered Camelot," but the wish to bring it more vividly before the reader seems to have grown upon him in writing the later Idylls,—

> "Oh, brother, had you known our Camelot,
> Built by old kings, age after age, so old,
> The king himself had fears that it would fall,
> So strange, so rich, and dim; for where the roofs
> Totter'd toward each other in the sky,
> Met foreheads all along the street of those
> Who watch'd us pass; and lower, and where the long
> Rich galleries, lady laden, weigh'd the necks
> Of dragons clinging to the crazy walls."

It is to be feared Camelot was an unsanitary place; though it is historically evident that human beings did live, and in many parts of the East do now live, amid picturesque heaps of buildings which would seem as adverse to life and health, to a modern European Sanitary Commission, as anything could well be. Before quitting Tennyson's ideal architectural sketches, we may refer to one suggestion of detail, not strictly architecture, but decorative work, in the "Princess": the description of the gateway, on either side of which,—

> "Two great statues, art
> And science, caryatids, lifted up
> A weight of emblem, and betwixt were valves
> Of open work in which the hunter rued
> His rash intrusion, manlike, but his brows
> Had sprouted, and the branches thereupon
> Spread out at top, and grimly spiked the gates."

The idea of the subject of Actæon with his horns ramifying over the gateway might really be very effectively carried out as a wrought-iron design.

In Tennyson's references to actual architecture as part of the scenes of his poems, there is not only a great deal of picturesque and vivid expression, but also that knowledge of the subject which belongs to a critically-cultivated taste in art, and which some poets have so much wanted in their artistic references. Such critical feeling increases the value of the poet's references to the subject; it enables him not only to say the right thing, but to say it in the right way. This is admirably illustrated in one of his later small poems, "The Daisy," a great portion of which is, in fact, a kind of poetical reminiscence of the points of interest in a run through part of Italy. In this little poem the various phases of architectural interest in various localities are touched most happily and picturesquely, each in a line or two, or at most a stanza of four lines:—

> "What Roman strength Turbia show'd
> In ruin by the mountain road;
> How, like a gem, beneath, the city
> Of little Monaco, basking, glow'd."

The white towers by the blue sea formed the contrast that all painters in pigments or in verse have loved:—

> "What slender campanili grew
> By bays, the peacock's neck in hue;"

then at Florence:—

> "In bright vignettes, and each complete,
> Of tower or duomo, sunny sweet,
> Or palace, how the city glitter'd
> Thro' cypress avenues, at our feet."

But the architecture of the Lombard plains had no sunshine to gild it; it was all, on that occasion, a plague of rain:—

> "Of rain at Reggio, rain at Parma;
> At Lodi, rain, Piacenza, rain.
>
> And stern and sad (so rare the smiles
> Of sunlight) looked the Lombard piles;
> Porch-pillars on the lion resting,
> And sombre, old, colonnaded aisles.
>
> O Milan, O! the chanting quires;
> The giant windows' blazon'd fires;
> The height, the space, the gloom, the glory!
> A mount of marble, a hundred spires."

This is a charming example of light architectural criticism, put into poetic form, seizing and recording in the most suitable phrases the leading elements in the effect of each style. In the combination of architecture with landscape there is a lovely little touch in one of his earlier poems, "The Gardener's Daughter," in which an exquisite description of English meadow landscape gets the last touch of interest from the presence of the cathedral city in the distance, seen beyond the "slow broad stream," which,—

> "Creeps on,
> Barge-laden, to three arches of a bridge
> Crown'd with the minster towers."

Tennyson's poems also present us with one of the not very frequent instances in poetry in which images borrowed from architecture are used to illustrate something in itself of deeper and higher interest. This is in the very pathetic little poem, "The Deserted House," in which the body from which the life has departed is compared, in a good deal of detail, to the house deserted by its inmates:—

> "Life and thought have gone away
> Side by side,
> Leaving doors and windows wide:
> Careless tenants they!
>
> * * * *
>
> Close the doors, the shutters close,
> Or thro' the windows we shall see
> The nakedness and vacancy
> Of the dark deserted house."

There is a very powerful piece of imagery of the same class, it may be observed, in a poem by Edgar Allan Poe, in which the human body is compared to a castle; but the contrast is here not between life and death, but between sanity and insanity. Through the windows of the castle there used to be seen fairy dances of the thoughts inside, but now only—

> "Vast forms that move fantastically
> To a discordant melody:"

as in Tennyson's poem, the metaphor is carried out in detail, and in a very powerful manner. Browning, again, has used the idea of the body as the house, of which the soul is "the householder," in his remarkable epilogue to "Fifine," where the soul contemplates the old worn-out house it is leaving,—

> "Every crumbling brick embrown'd with sin and shame;"

and remembers, among the vexations of its past experience there,—

> "All the worry of flapping door and echoing roof."

But this symbolic view of the body as the house or castle of the soul has often appeared in metaphorical and religious writing. It is only occasionally that a new force and picturesqueness is given to it by some poet of real power taking up the idea and expressing it in the vivid manner which brings it home to our fancy with new meaning and pathos.

Turning, lastly, to the varied pages of

* See pp. 491, 526, 558, 628, 696, *ante*.

* In the essay "On Building." Except that Bacon actually wrote in prose, this charming essay might be quoted as among the architecture of the poets, for it is poetical enough, with the additional advantage that it could be realised; though, it is true, only by a millionaire.

Browning, instinct everywhere with vivid and picturesque expression, we find among them references to architecture which are marked by a fuller combination of force of descriptive power with real knowledge of the subject than is to be found in the pages of any other English poet of any age. Like Clough, Browning is quite an art-critic in knowledge and perception, with a much greater power of detailed characterisation. As an example, which will at once and by itself justify this view, take the remarkable passage in "Sordello" (book v.), which is introduced as a poetical amplification of the proverb, "Rome was not built in a day," but which is really a comprehensive sketch of the history of architecture. Begin at the beginning, he says in effect,—

"Study mere shelter, now, for him, and him.
Nay, even the worst,—just house them! Any cave
Suffices; throw out earth! A loop-hole? Brave!
They ask to feel the sun shine, see the grass
Grow, hear the larks sing? Dead art thou, alas!
And I am dead! But here's our son excels
At hurdle-weaving any Scythian; fells
Oak and devises rafters; dreams, and shapes
His dream into a doorpost, just escapes
The mystery of hinges. Lie we both
Perdue another age. The goodly growth
Of brick and stone! Our building-pelt was rough,*
But that descendant's garb suits well enough
A portico-contriver. Speed the years,—
What's time to us? At last, a city rears
Itself! Nay, enter,—what's the grave to us?
Lo, our forlorn acquaintance carry thus
The head! Successively sewer, forum, cirque,—
Last age, an aqueduct was counted work,
But now they tire the artificer upon
Blank alabaster, black obsidion,—
Careful, Jove's face be duly fulgurant,
And mother Venus' kiss-creased nipples pant
Back into pristine pulpiness, ere fix'd
Above the baths.
* * * *
The work march'd step by step,—a workman fit
Took each,—nor too fit,—to one task, one time,—
No leaping o'er the petty to the prime,
When just the substituting osier lithe
For brittle bulrush, sound wood for soft withe,
To further loam-and-rough-cast work a stage,
Exacts an architect, exacts an age."

"That way was Rome built," he concludes, after one or two more details; and how admirably true is the distinction between the Rome of the aqueducts, the brick Rome, and that of the Caracalla baths; how complete the characterisation of the particular excellences of Late Roman sculpture,—rich and sumptuous execution without much of intellectual expression. The passage, taken as a whole, might almost pass as a *resumé* of Viollet-le-Duc's elaborate "History of the Habitation"; and if it is remembered that this poem was written forty-five years ago, before any of Viollet-le-Duc's historical and critical essays,—before the birth, one might say, of the modern school of architectural criticism,—we must form a high idea indeed of the critical intuition of the poet who could introduce such a passage as this merely as a passing illustration in a poem devoted to other and more serious considerations. In a previous page he refers to the relation between the old Roman structures and the architecture of the Renaissance:—

"New structures, that inordinately glow,
Subdued, brought back to harmony, made ripe
By many a relic of the archetype
Extant for wonder; every upstart church
That hoped to leave old temples in the lurch,
Corrected by the theatre forlorn,
That, as a mundane shell, its world late born,
Lay, and o'er-shadow'd it."

Again, how characteristic of northern Mediæval architecture is the description (in the Third Book) of that

"Grim town
Whose cramp'd, ill-featured streets huddled about
The minster for protection, never out
Of its black belfry's shade and its bells' roar:"

the minster gloomy even at sunset:—

"When the sun stopp'd both peaks
Of the cleft belfry like a fiery wedge,
Then sunk, a huge flame on its socket edge,
With leavings on the grey-glass oriel pane
Ghastly some minutes more."

Equally does the poet make us at home in the old patched castle at Goito, with its room with Saracenic decorations:—

"A maze of corridors contrived for sin,
Dusk winding-stairs, dim galleries got past,
You gain the inmost chambers, gain at last
A maple-panell'd room: that haze which seems
Floating about the panel, if there gleams
A sunbeam over it, will turn to gold
And in light-graven characters unfold
The Arab's wisdom everywhere; what shade
Marr'd them a moment, those slim pillars made,
Cut like a company of palms to prop
The roof, each kissing top entwined with top
Leaning together."

Among the miscellaneous poems, it may be observed that Browning long ago saw and felt what many architects do not seem to see or know, that Giotto's Campanile is incomplete; and in "Old Pictures in Florence," he raises a charge against Giotto's ghost* for having disappointed him thus in leaving the work incomplete; Giotto's round O, indeed, was perfect according to the tradition, but he did not perfect his Campanile; and it is proposed by the poet as a fit task for modern Italy, to bring about that,—

"The campanile, the duomo's fit ally,
Shall soar up in gold full fifty braccia,†
Completing Florence, as Florence, Italy,"

And he adds, with a pardonable pride:—

"At least to foresee that glory of Giotto
And Florence together, the first am I!"

One charming bit of architectural painting of Browning was before quoted in these columns, the contrast drawn, in the poem "In a Gondola," between the architectural façade of a Venetian Palace towards the main canal,—

"Window just with window mating,
Door on door exactly waiting
Like the staid face of a child":

and the "playing-face" of the same building in the rear, where—

"No two windows look one way
O'er the small sea-water thread
Below them."

The "Statue and the Bust" is an essentially Florentine poem, full of picturesque passing allusions, among which the poet has fixed the Riccardi Palace in the minds of all his readers as,—

"The pile which the mighty shadow makes.

(For Via Larga is three-parts light
But the palace o'ershadows one,
Because of a crime which may God requite)":

the crime being the strangling of the true Republican freedom in Florence by the Medici, who built the Riccardi Palace as their abode when they arose into power. How fine is this touch of the dark mass of building, the home of oligarchical tyranny, over-shadowing the otherwise bright street.‡ The splendid drama, "Luria," is full of touches, too, of Florentine effect and Florentine art, notably a remarkable one in which he represents Luria, the Moorish General, as having made a sketch on the side of his tent how the façade of the cathedral might be completed,—

"*Braccio.* Did he draw that?
Secretary. With charcoal, when the watch
Made the report at midnight; Lady Domizia
Spoke of the unfinish'd Duomo, you remember;
That is his fancy, how a Moorish front
Might join to, and complete the body,—a sketch,—
And again, where the cloak hangs, yonder in the shadow."

This idea of the Moorish front to the Duomo was made the subject of a paper read before the Browning Society by Mr. Ernest Radford, but we do not know what line was taken about it, or whether any illustration in the way of a design was attempted. A very fine passage in the same drama is worth quoting, as filled full of the spirit of the Renaissance. The Moorish warrior is not eager for peace, for with peace his occupation will be gone, and all Florence will turn again to the arts in which he cannot take part,—

"Florence at peace, and the calm studious heads
Come out again, the penetrating eyes;
As if a spell broke, all resumed, each art
You boast, more vivid that it slept awhile.
'Gainst the glad heaven, o'er the white palace front
The interrupted scaffold climbs anew;
The walls are peopled by the painter's brush;
The statue to its niche ascends to dwell."

Here we have no mere antiquarian reference; we are brought face to face with the Renaissance artists at their work; we seem in the very midst of the life and joy of the Renaissance. Or do we want a description of the great Catholic temple? Not a mere description of its details, as in a guide-book, but of the thoughts it stirs in the mind? Byron has treated it before, but this is in a different key, and with more glowing thought. The poet wanders in his vision of "Christmas Eve" from one abode of Christian worship to another, and leaving the Salem Chapel on the heath, he travels far over the earth in dream, till—

"What is this that rises propp'd
With pillars of prodigious girth?
Is it really on the earth,
This miraculous Dome of God?
Has the angel's measuring-rod
Which number'd cubits, gem from gem,
'Twixt the gates of the New Jerusalem,
Meted it out,—and what he meted,
Have the sons of men completed?
—Binding, ever as he bade,
Columns in the Colonnade,
With arms wide open to embrace
The entry of the human race
To the breast of,—what is it, yon building,
A blaze in front, all paint and gilding,
With marble for brick, and stones of price
For garniture of the edifice?
Now I see, it is no dream;
It stands there and it does not seem:
For ever, in pictures, thus it looks,
And thus have I read of it in books
Often in England, leagues away,
And wonder'd how these fountains play,
Growing up eternally
Each to a musical water-tree,
Whose blossoms drop, a glittering boon,
Before my eyes in the light of the moon,
To the granite lavers underneath."

Or if we want to linger in some smaller church of the Renaissance, we can imagine ourselves musing with the bishop who "Orders his tomb in St. Praxed's Church"; he was vexed that the last bishop had secured the best niche:—

"Shrewd was that snatch from out the corner south
He graced his carrion with, God curse the same!
But still my niche is not so cramp'd but thence
One sees the pulpit o' the epistle-side,
And somewhat of the choir, those silent seats,
And up into the aëry dome, where live
The angels, and a sunbeam's sure to lurk;
And I shall fill my slab of basalt there,
And 'neath my tabernacle take my rest,
With those nine columns round me, two and two,
The odd one at my feet where Anselm stands:
Peach-blossom marble all, the rare, the ripe
As fresh-pour'd red wine of a mighty pulse."

It is amusing to contrast with these vivid and sympathetic descriptions of ancient architecture, Browning's occasional "girds" at some modern piece of sham, such as the sneer of the modern Catholic bishop in "Blougram's Apology," at the Pugin-and-Rickman plaster Gothic:—

"It's different preaching in basilicas,
And doing duty in some masterpiece
Like this of brother Pugin's, bless his heart!
I doubt if they're half-baked, those chalk rosettes,
Ciphers and stucco-twiddlings everywhere,
It's just like breathing in a lime-kiln: eh?"

A statement which the bishop volunteered as an argument for another glass of wine; and there have been worse ones. And according to Browning, it is quite the part of a poet to keep a look-out on these practical shams of art, as well as on what is commonly called the poetic side of the subject; for in his sketch of an ideal poet, in "How it Strikes a Contemporary," he suggests that the poet is "the *Corregidor*," and represents him as keeping a general eye on the follies of his generation, and looking, among other things, after the preservation of ancient buildings and the construction of modern ones:—

"You'd come upon his scrutinising hat,
Making a peak'd shade blacker than itself
Against the single window of some house
Intact yet with its moulded Moorish work,—
Or else surprise the ferrel of his stick
Trying the mortar's temper 'tween the chinks
Of some new shop a-building, French and fine."

One might give the poet a good deal of occupation in London in that way. Does he, we wonder, go and inspect the rubbish upon which the footings of jerry-builders' houses are laid? But that would be more than work enough for one poet.

Let us conclude, however, with a reference to one more of those rare passages in which poets have drawn upon architecture for metaphor and analogy in the higher sense; and none, perhaps, has used the architectural metaphor to such fine purpose as Browning has done in one of his most remarkable poems, "Abt Vogler," the main object of which is to trace the connexion between musical art and spiritual life, but in which he commences, so to speak, on the other side of his subject, and uses architectural ideas in the first instance as an illustration of music. In this eloquent passage, the opening stanzas of "Abt Vogler," the musical composition which the speaker in the poem has just evolved from the organ, becomes in his idea an edifice of sound which he has raised,—

"The structure brave, the manifold music I build
Bidding my organ obey, calling its keys to their work"

just as Solomon called upon supernatural beings to build him a palace (this, we presume, is a Talmudic legend); and one would build the foundations, "broad on the roots of things," of the musical palace,—

"And another would mount and march, like the excellent minion he was,
Ay, another, and yet another, one crowd but with many a crest,
Raising my rampired walls of gold as transparent as glass,
Eager to do and die, yield each his place to the rest:

* *I.e.*, we worked then in a rough garb, "pelt" or skin, suitable to our rough way of building.

* Hardly a fair charge, as it probably was no fault of Giotto that the spire was never added, if, indeed, the design be really Giotto's, which some recent investigators of the evidence have doubted.

† The traditional height to which the spire was to have been carried.

‡ The Medici moved into the Palazzo Vecchio in 1430, as a more ostensible outward assertion of their supremacy. The palace in Via Larga (now "Via Cavour") was sold to the Riccardi, whose name it now bears, in 1659.

For higher still and higher (as a runner tips with fire,
When a great illumination surprises a festal night,—
Outlining round and round Rome's dome from space to spire)
Up, the pinnacled glory reach'd, and the pride of my soul was in sight."

Nor was the palace to his fancy uninhabited,—

"For there wanted not who walk'd in the glare and glow
Presences plain in the place."

Only to those who combine some knowledge of both the arts, perhaps, can the full beauty of this passage, of which we have only space to quote isolated portions, be fully apparent: it goes beyond the mere forms of expression of architecture and music, to that pure metaphysical expression of form which is common to both.

Thus we see that some at least of our poets have not only fresh and brilliant lights and criticisms to throw out upon architecture, but that they can raise the subject higher than in general it can be raised in its actual conditions of practice, by assimilating architectural images and associations with some of the highest and deepest thoughts of which our minds are capable, and thus giving a new idea of the intellectual dignity and interest of the subject. And it says something for the general advance in the comprehension of subjects of this class that we find the references to architecture taken from the latest poets are, on the whole, by far the fullest, the most complete, and the most forcible and picturesque in character, of all which we have been able to adduce.

ASSYRIAN ANTIQUITIES.

MR. T. G. PINCHES, of the Oriental department of the British Museum, has taken advantage of the annual Spring cleaning at the British Museum to re-arrange some of the cases in the Assyrian galleries, and to exhibit some of the latest additions to the collection. In the first case, in the Nimroud Room, devoted to Babylonian antiquities, we have several new or hitherto unexhibited antiquities, including three bronze figures of ancient Chaldean fire priests, each holding the sacred fire-cone. These antiquities come from the city of Zergul, on the Shat el Hie, the site from which M. De Sarzec obtained the valuable collection of antiquities now in the Louvre. A curious black stone model of a wig with the hair neatly arranged in curls, confined by a band with a square wooden board on the forehead, similar to those worn by the Indians of North America, is also from the same site. These antiquities are all inscribed with the name of "Gudea, Viceroy of Zergul." Several fine examples of the votive cones, some in excellent preservation, are exhibited in this case. There is also the later Babylonian copy, made probably during the time of Nabonidus, of an inscription of Dungi, king of Ur, which was written on a plate of silver, and placed in the Temple of Nergal, at Kutha. The site of this city was explored by Mr. Rassam, at Tel Ibrahim, during his last expedition. These antiquities show the great advance Babylonian civilisation had made at least 4,000 years before the Christian era.

Some fine examples of the early contract tablets, which we have referred to in these columns, are exhibited. The curious tablets written in duplicate, the one copy forming an envelope or case for the other, were found at Tel Sifr in South Babylonia. They relate to sales of land, houses, slaves, deeds of partnership, and law cases. Several of the inscriptions have been published by Dr. Strassmaier in the Transactions of the Berlin Congress of Orientalists, but the inscriptions being written in very ancient characters are extremely difficult to read. The examples exhibited are dated in the reign of the Kassite king Khammuragas, B.C. 2750; and one inscription is written in Semitic Babylonian, showing that the Semites were already traders, as were the Phœnicians and Jews in after-times. Several inscriptions relating to the buildings and public works of Babylon are also exhibited in this case. An inscription on a barrel-cylinder of Nebuchadnezzar gives an account of the restoration of the temples of Babylon, and a small fragmentary tablet gives an inventory of the various kinds of stone, timber, &c., used in the building of the temple of Bit Saggal, or the temple of Belus, in Babylon.

The cylinder of Cyrus, recording his capture of Bablyon in B.C. 538, and the restoration of the Babylonian temples, is also now exhibited. An interesting fragment, which might be exhibited, is the portion of a cylinder inscription of Alexander the Great, called in the Babylonian, Iskandir Makiouku, "Alexander of Macedon." There is, however, a finely-preserved cylinder of Antiochus Seleucus, 217 B.C., which was found at Borsippa, describing his restoration of the temple of Belus at Babylon, and that of Nebo at Borsippa, showing that these buildings were in existence as near the Christian era as the third century.

There is also exhibited one of the finest examples of Babylonian legal or commercial tablets,—a large tablet, 10 in. long by 6 in. broad, containing an account of the sale of houses, land, fields, plantations, gardens, slaves, and property in Babylon and Borsippa, in the fourteenth year of Darius Hystaspis, B.C. 506. In the Assyrian side-room the fine series of boundary stones found by Mr. Rassam at Abu Hubba, have been exhibited. These are dated in the reigns of Milisipak, B.C. 1400; Nebuchadnezzar I., B.C. 1140; and Nabu-ukena-abal, B.C. 100. The curious demoniacal sculptured figures, and emblems of the gods, may now be inspected, and will be found to illustrate many obscure points in the mythology of Babylon and surrounding nations. There is also here a curious small votive stelæ of Assurbanipal, carrying on his head a large basket of offerings, &c., cut in a most archaic style.

In the central saloon there are many new exhibits. The bronze gates from Ballawat are, of course, the chief feature. But in the lower part of this case are fragments of statues from Abu Hubba, showing that there were works of a similar age and style to those found by M. de Sarzec in Chaldea, in the lower strata of the mound. There are also fragments of alabaster statues of the gods and goddesses of Babylon found by Mr. Rassam in the Birs Nimroud, the site of Borsippa. Some curious bricks from Babylon, bearing inscriptions of Nebuchadnezzar, are also shown here. These bricks bear inscriptions of twenty or thirty lines relating to the building works of the king, written in a small hand, similar to that employed on the tablets. An examination of the various copies, however, shows that they were printed or impressed from a metal stamp, and that in one case the wrong side of the die was used, so that the characters are in relief. In the second case in this saloon are fragments of a bronze altar from the ruins at Toprak Kala, on Lake Van, in Armenia. These bear inscriptions of Rusas, king of Armenia, the contemporary of Assurbanipal. There are also shown the foundation tablets from Ballawat, and encaustic tiles from Nimroud. The Hittite sculptures from Jerablus or Carchemish are now in this saloon, and a recently-discovered fragment furnishes a fine head, with beard and features well carved. Among the antiquities exhibited here is a stone socket of a door-post of black granite, bearing an inscription of Gudea, B.C. 4000; also those from Ballawat, B.C. 885. These show that the same mode of swinging doors was in use both in the earlier and later periods.

In the case of engraved stones are several new examples, and progress is being made towards exhibiting each stone, accompanied by a plaster of Paris impression of its work. It is much to be regretted that the uncertainty of climate has rendered it necessary to glaze the sculptures in the Kouyunjik room, as the light is so badly arranged that frequently it is impossible to see the sculptures on account of the reflection of the glass.

Presentation to an Architect.—At the meeting of the Salford Board of Guardians on the 27th ult., one of the items on the business-paper was the presentation of a testimonial to Mr. Booth, the architect of the new Infirmary for the Poor at Hope, erected for the guardians of the Salford Union. The testimonial took the form of an engrossed excerpt from the Board Minutes, of which the following is a portion:—

"At a meeting of the Guardians of the Poor of the Salford Union, held on Friday, the 27th day of April, 1883. Resolved unanimously, That the guardians desire to express their satisfaction with the statement submitted by the architect, Mr. Laurence Booth, F.R.I.B.A., of the expenditure in the building operations connected with their new infirmary at Hope, showing, as it does, a sum total which is several thousand pounds less than his original estimate of the probable cost, and they accord to him their thanks for the careful, honourable, and successful manner in which he, as their architect, has designed and supervised the carrying out of such an important undertaking."

THE QUESTION OF WAGES FROM A FRENCH POINT OF VIEW.

IN the present day, when each fresh census shows us clearly in every country the tendency of the population to gather more and more thickly into the great centres; when the ever-growing millions of our metropolis and of the capitals of the world generally are yearly spreading over larger and larger areas, there are few subjects worthier the attention of the philanthropist,—which, indeed, more warmly claim his compassion,—than the sad and cruel statistics of the misery which exists in the midst of so much of that prosperity which is the primary cause of the increase in the great centres of population. It is, and should be, with dismay that one learns from the stubborn census tables how in this great beehive of our English metropolis, with its four millions of living bodies,* the population of the northern shore of the Thames, merely in that portion of the city extending some six miles below London Bridge,—a great grovelling *terra incognita* to most Londoners,—is equal to the combined population of such thickly-peopled centres as Manchester, Birmingham, and Salford, while across the narrow stretch of the river, the southern population "below bridge" is equal to that of the whole of Liverpool. Such statistics are suggestive, taken in connexion with the terrible meaning they bear to any one who knows the character of those huge districts, with their thousand tales of so much of the wretched misery that exists in the metropolis.

What more heartrending and unsatisfactory problem is there than that of determining the causes of the misery which haunts our great capitals? What more fruitless task than that of finding its successful remedy? Much, however, undoubtedly can be done to alleviate the suffering which exists, and this much there are, fortunately, many courageous souls endeavouring to carry out. Those chief causes of so much of the misery to be met with in our capitals,—sickness, infirmity, and old age,—State and private benevolence strive yearly to alleviate. With that other serious cause,—misconduct,—the task is harder, as it has been found with the large families which so singularly seem associated more with struggling poverty than with comfortable affluence. Three generations have passed since Malthus aroused the attention of the world by his startling fears as to the growing disproportion between the mouths to feed and the supply of food with which they were to be filled. The errors of the worthy economist, with many other mistaken views wrongly attributed to him, have been explained away. We are told to look upon our growing population with congratulation, but in the face of this, the teeming courts and streets and alleys of our metropolis tell only too truly a sad tale of moral corruption and depravity which must strike every one who allows himself one moment's consideration on the subject. All would be for the best in the best of worlds were those large families of our more thickly-populated districts all models of that propriety, happiness, and harmony which economists seem to take as the basis of their calculations.

There remains, however, another important cause of much of the misery that exists in our centres of population, ill-remunerated labour. Few questions have excited or are likely to excite warmer discussion than this question of the remuneration of labour,—of wages, in a word,—since no question concerns more directly the interests of every member of the community. It is a question of essentially vital importance, very different from many of the social and economic questions so hotly discussed by half-taught reformers.

How far this matter of the inadequate remuneration of labour may be regarded as one of the real causes of the misery noticeable in great centres of population is a question worthy of attention. In so far as regards the French capital, some interesting facts relating to the point have been recently furnished to the pages of our esteemed contemporary, the *Revue des Deux Mondes*, by so competent an authority as M. le Comte d'Haussonville, whose researches into the question, directed by something more than solely an acquaintance with his own country, have already attracted no small share of attention from the thoughtful. M. d'Haussonville arrives at some instructive conclusions, conclusions which, though drawn from foreign

* In 1801 the population of London was 963,863; in 1881, 3,816,483.

data, are of no less interest to English readers as bearing on a question as pressing on this side of the Channel as on the French.

In the first place, we are shown the fallacy of that "brazen law" which has so constantly been laid down that the rate of wages is regulated inevitably by the consideration of what is necessary to give a man the means of existence,—the minimum, certainly, it will be agreed. Death from actual starvation, if it now and then occurs, is happily rare; it is the slow starvation which is the cause of so much crime, vice, and demoralisation generally, which, alas! are only too common in all great cities. It is a difficult question to answer, that of how much is absolutely necessary for existence; the answer would vary so singularly with the circumstances and conditions of the case; the hard fate which many an inhabitant of a city bewails would be accepted with gratitude by thousands of toilers in the country. The cost of life, M. d'Haussonville very sensibly, we think, lays down not at what is the bare necessary, but at what will procure a minimum of comfort and happiness.

Foremost, of course, in the consideration of the wages of the Parisian workman comes the question of house-rent, a subject of hot discussion for years past,—on one side treated by the scientific men and the philanthropists from a hygienic point of view, on the other by the politicians as an admirable party cry. In vain the necessity is suggested of erecting adequate accommodation in the shape of industrial dwellings. M. d'Haussonville exactly hits the mark in stating that this will only meet the difficulty half-way in providing comfortable homes merely for those workmen already in enjoyment of decent incomes. There still remain the really necessitous. How are the claims of these to be satisfied, with the high rate to which rent has of late years risen? Within ten years alone the rise has been from 20 to 25 per cent. M. d'Haussonville shows us that if house-rent has thus risen, the price of food has not been so largely affected. Bread, thanks to free trade, has ceased to vary in price, as in the past, and if less bread is consumed than formerly, more meat is shown by statistics to have entered Paris of late years; for the Parisian workman is far more fastidious than is generally supposed; the fare with which his parents in the country have been from their youth amply content would to the Parisian seem very unpalatable. The chief rise is in the luxuries (poultry and such like) which tend more and more to enter into the cost of life with the Parisian workman. One of his chief expenses, however, consists in the necessity of his taking his meals out of doors, and though private benevolence has here largely aided the dependent classes by the admirable institutions which answer in Paris to our "soup kitchens," yet it can be understood that this is only of partial assistance to the greater number of workmen. Away from home the workman has to make his meals at some one of the apparently innumerable *gargotes* or little eating-houses scattered over Paris in every direction. Here of course the cost of his meals enters as a very large item into the calculations, for there are very few employers of labour like the Orleans Railway Company, which every day gives its 1,300 hands a first-rate meal with wine, at the nominal price of 13 to 14 *sous*, little over sixpence. Summing up this item of food, M. d'Haussonville sets down at from 550 to 750 francs a year (22*l.* to 30*l.*) as a fair average for the workman. The item of clothes has of late years been, of course, largely affected by the action of free trade; on Sunday the national *blouse* is certainly less often seen in the streets of Paris than used to be the case, and if the *ouvrier*, and still more his hard-working wife, dress perhaps more smartly than some worthy moralists would like, we think that most readers will be of M. d'Haussonville's opinion that this is a point scarcely open to blame. "I doubt, in spite of the moralists, if a little extra care of the exterior is not an indispensable condition of a certain interior dignity. There exists in this matter a great difference between the poor of London and the poor of Paris," and, adds M. d'Haussonville, "I hardly think there is ground for much regret."

As a general result of his observations, it is the opinion of the writer that the statement that the cost of life has doubled in Paris of late years is greatly exaggerated; if this be true of the item of rent, it is not the case with the other necessaries; it is much nearer a rise of only a quarter or even a fifth. As an average necessary sum for the Parisian workman, M. d'Haussonville lays down the following figures as the result of his inquiries:—For lodging, 100-150 francs (4*l.* to 6*l.*); food, 550-750 francs (22*l.* to 30*l.*); clothing, 100-150 francs; and divers expenses, 100 to 150 francs: a total varying from 850 to 1,200 francs (34*l.* to 48*l.*) per annum. The Parisian workman can certainly live for less than the former of these two sums, and we are shown how many are forced to do so; but all those who earn more than the higher figure are beyond the claims of sympathy on the score of insufficient wages to procure the means of subsistence; this is at the rate of from 2 francs 75 centimes a day to 4 francs (a little over 2s. 2½d. to about 3s. 2d.). With less than the former daily wage, the Parisian workman must endure many hardships; with anything above the larger sum a relative degree of comfort is ensured to him, always supposing him single; if married, his expense may be reckoned as increased by half, and for each child by a third.

These facts settled, M. d'Haussonville next proceeds to enter into some interesting details as to the actual wages earned by the Parisian workmen; these he roughly divides into three classes, first those who may be termed essentially the skilled hands, whose wages are largely dependent upon their intellectual abilities, combined with manual skill,—such workmen as printers, engravers, &c. In the second class manual skill is more directly necessary, this class including all the workmen connected with the building and kindred trades; the third class embracing merely those who, like porters, carters, and such like, are employed solely for hard work.

Of all the workmen of Paris none enjoy such advantages as those connected with the building trade; the rise in their wages of late years varies between 25 and 60 per cent. The Paris Municipality publish each year, as we have more than once in these pages explained, a "series" of prices by which all their tenders are regulated. This series of prices, which some years ago was laid down as a maximum, has now, however, come to be regularly quoted and demanded by the workmen generally, even from private firms. Such has been the success of the workmen in their claims that the stone-cutter (*tailleur de pierre*) receives his 1 franc 20 centimes (11½d.) an hour, that is in the summer 12 francs a day, hard on 10s.; the *poseur*, or layer, his 9 francs; the *maçon* and bricklayer, 8 francs 50 centimes; the *garçon maçon* and *briqueteur*, 5 francs; the *charpentier*, or house-carpenter, 9 francs; the *couvreur*, or tiler, 8 francs; the *garçon*, 5 francs; the plumber (*plombeur* or *zingueur*), 7 francs 50 centimes,—the apprentice, 5 francs; the gas-fitter (*monteur gazier*), 10 francs 25 centimes,—his assistant, 6 francs 50 centimes; the *parqueteur*, 9 francs; the carpenter and joiner (*menuisier*), 8 francs; the locksmith (*serrurier*), 7 francs 50 centimes; the *fumiste*, who looks after the chimneys, 7 francs 50 centimes; the marble mason (*marbrier*), 8 francs 50 centimes; the polisher, 7 francs 50 centimes; the decorative painter, 12 francs; the ordinary painter, 8 francs; glazier (*vitrier*), 8 francs 50 centimes; the gilder (*doreur*), 10 francs; the paper-hanger (*colleur*), 8 francs; and the mirror-fitter (*miroitier*), 10 francs. Some of these have, of course, a dull season of about two months during the winter. In the furniture trade wages are almost equally high, the carver (*sculpteur sur bois*) getting his 9 to 12 francs 50 centimes a day; the upholsterer (*tapissier*), 8 to 12 francs 50 centimes; the *ébéniste en meubles de luxe*, or cabinet-maker, from 8 to 11 francs, and so on, down through the various other distinctive branches, the ordinary chairmaker getting his 4 francs to 6 francs 50 centimes. Such being the wages of the workmen in the furniture trade, it is scarcely a matter for surprise that Germans and Italians, satisfied with wages very far below these, can successfully compete with the Faubourg Saint Antoine.

In those trades, then, in which professional skill is as much remunerated as manual ability, the minimum may be set down as at about 5 francs (4s.), the maximum at 12 francs (about 9s. 6d.). In those trades in which superior intellect combined with skill is required, the usual wages run from 7 to 10 francs; high wages from 10 to 15 francs, and exceptional wages from 15 to 30 francs a day,—all considerably above what is absolutely necessary for existence; it is among the less important trades that the wages will be found to be so small, averaging terribly near the minimum of the necessary.

The latest statistics available,—those of 1876,—show that there are employed in the factories of Paris about 250,000 hands; as porters and such like, some 75,000; as vagabonds, 15,000; out of these about 74 per cent. gain 4 francs daily, about 22 per cent. 3 to 4 francs, and 4 per cent. less than 3 francs. Approximative as are these figures, they are sufficient to show, as M. d'Haussonville urges, that bad wages cannot be represented as the general cause of the misery which exists in Paris. Paris is, indeed, what it has often been termed,—the workman's paradise; a large number of workmen gain from 2,000 to 3,000 francs (80*l.*–120*l.*) a year, and, as has been remarked of the working-man in every part of the world, his position is very much more enviable from this point of view than that of thousands of *employés* and bank-clerks with incomes very little over half what the workman gains, and who, hampered by the necessity of "keeping up their position" endure miseries unknown to the working-man.

The position of the porter and the carter class in Paris,—as, indeed, in London,—is hard; he is utterly unable to marry, which is his interest and duty, unless, indeed, his wife can also earn her keep. This leads M. d'Haussonville on to the sad question of the remuneration of female labour in Paris. The statistics are lengthy, searching, and indisputable; women in Paris, as in London,—as, indeed, the world over,—are but miserably paid for their work, and sad are the figures which are brought forward. We have seen what may be considered the minimum wage to keep body and soul together; but very few women engaged in honest occupations are able to reach even that low figure. The statistics are saddening indeed. Marriage, of course, is the theoretical alternative, but where is the theoretical husband to be found? Should we be astonished, then, at the alleged immorality, the depravity, and the misery, which form such blots on our boasted civilisation?

The existence of this misery once proved among those who have so truly been termed "the dependent classes," what means are there by which the evil may be alleviated? There exist the two alternatives of violent and pacific means. Among the former must be classed the strikes of late years, but these have been invariably among the workmen who, as we have seen, are already in enjoyment of incomes more than sufficient to obtain a relative degree of comfort. It is, in fact, the well-remunerated who have most clamoured for rise of wages. The poor, indeed, cannot afford to strike. Thus while good wages have risen, the lesser wages have remained stationary, and, under the influence of increased prices, may be said to have decreased.

Among the pacific means, of course, stand foremost the two methods of allowing the workman to be associated directly in the profits of his labour, and that which, while leaving him still dependent on a daily wage, assures him a share in the profits of the master; in a word, the system of co-operation and of participation in profits. Co-operation would not appear so far to have proved highly satisfactory (at least, in France) as a general principle; but the system of participation in profits has, on the contrary, met with some success. It is the opinion of M. d'Haussonville that this system will continue to work well as long as its action is based on the voluntary surrender of a share of his profits by the master to his men; so soon as this becomes obligatory and the men express their unwillingness to share alike in the losses, the system fails.

Some three years ago an excellent work was published by M. Fourgerousse on the subject of the relations between "masters and men." From this it would appear that in Paris there are some twenty-five houses in which the system of participation is followed. The principle in most is based on the *pro rata* of the wages earned by each; "to him who hath, more shall be given" is the maxim carried out.

The sole remedy for much that is thus proved to be unsatisfactory is, in M. d'Haussonville's opinion, the intelligent diffusion of technical education, the advantages of which are apparent alone from the fact that it will be seen how invariably it is the professions directed by the most skill and intelligence which are the best remunerated. But this education must be directed with the utmost skill. What has in no small measure tended to decrease the

already wretched wages of the needlewoman in Paris has been the heedless manner in which thousands of girls who might otherwise have made excellent servants have been taught to use their needle with a view to obtaining a livelihood. Here the spread of instruction has done harm instead of good.

It would seem as if it were impossible to avoid the existence of much of the inequality of remunerated labour which is the cause of such misery in our complicated society; it is the inevitable law that the weak must give place to the strong, alike the intellectually and the physically strong. Science has shown this to be the whole system of nature, the origin of our very condition. Nature, as we see in the animal kingdom, knows no pity; but it is the possession of that divine sentiment which in reality distinguishes us from the beasts; the sentiment on which we may base at least one element of superiority over them. On this pity, therefore, the future care of the unhappy thousands in our midst must rely; charity, well organised and well directed, must exercise its influence to alleviate the sufferings which in our complex society would seem inseparable from the existence of so many. This, the economic justification of charity, appears to be the sole conclusion to be drawn from a consideration of the unsatisfactory question of wages.

ON THE IMPORTANCE OF A DUE PROVISION FOR JUSTICE IN THE DECISION OF ARCHITECTURAL COMPETITIONS.

As architectural competitions, for obvious reasons, are never likely to know desuetude, but, on the contrary, since, having been publicly recognised and in a manner organised by the Royal Institute of British Architects, they are likely to become more than ever the order of the day, the Olympian games of the profession, into which all important architectural practice and enterprise is destined to merge, I wish to say a word or two on the important matter of providing means in each instance for a just selection of the design to be executed; and, conceiving this to be the most important matter of all to the success of competitions, that without which they must be more or less failures, to beg the serious attention of all concerned to my remarks.

A failure, for the greater part, have architectural competitions ever been. The best designs have seldom won. The race has not been to the swift nor the battle to the strong, as, in such matters, we have a right to expect it; and I was glad to see a public admission of this fact, or at least that the best designs did not always win, before one of the metropolitan societies, reported in the *Builder* some months ago, because knowledge of the evil is so much power to remedy it. It is from this cause that so many important competitions which had made great noise have been mountains bringing forth mice. In such instances, I suspect the premiated designs have not only not been the highest, they have been a long way down in the scale of merit. So must the selected designs have been in some great Continental competitions, judging by the published prints of them.

The evil, since professional referees have been in vogue, has arisen, I believe, from the employment in almost every competition of but one referee; which renders it somewhat encouraging to find the published suggestions of the Institute mentioning "one or more," thereby suggesting and sanctioning a plurality. Let me earnestly recommend the invariable appointment of two or more referees,—the necessity for which will appear if we consider what should be his qualifications to whom alone the trust is committed,—who acts as sole referee,—to render him equal to the occasion. To be equal to the task, the sole referee should be equal or superior in ability to the highest that may compete,—the apex, if I may so speak, of the pyramid of talents engaged on the required design; one that has evinced, by pencil or pen, a philosophical grasp of architecture, and insight into its true nature. He should be prepared for all possible variations on the styles of the day,—nay, be looking for the new and original forms which architecture, whose "yesterday must ne'er be like its morrow," is destined to evolve in its progress, and welcoming the least sign of imaginative and creative power for the breathing of new life into it, with something like prophetic instinct to discern at what point of the horizon the new is to appear.

He should know how nature is to be imitated in architecture, and how to distinguish between true and false imitation of masters; and be himself a master of composition and chiaroscuro, familiar with the causes of beauty and sublimity, with a critical eye for harmony of form and refinement and expression in detail. He should be an earnest truth-seeker, capable of the deepest sympathy with the yearnings and strivings of others after it; whose passionate and unsullied love of art and zeal for its promotion have, without aid from the moral sentiment, swallowed up all feelings of professional jealousy, and rendered him proof against the temptation to reject any design that might throw his own works into the shade, or anticipate and forestall him in some cherished ideal of his own.

If no such *rara avis* as this can ever be forthcoming, what safety, I would ask, can there be in any competition where there is but a single referee? What encouragement for the competitor of absolute devotion to principle, who gives forth that which he most feels at the time,—the highest architectural truths he has learned,—the noblest forms and images he has cherished in his memory or his portfolio? Will he not feel himself at least—

> "Cabin'd, cribb'd, confined, bound in
> To saucy doubts and fears,"

though very different from those of *Macbeth?* Assuredly the most felicitous compound of architectural and sculptural forms ever framed may be overlooked or non-appreciated, especially if, as is not improbable, it is mixed up with some eccentricities in minor detail, and not among the most powerful or showy of drawings; for

> "It is the witness still of excellency
> To put a strange face on his own perfection."

What chance has a design, however good, if it lack a feature which the referee considers a *sine quâ non*, or if it go in the teeth of a fashion which he patronises? Will there not be strong temptation upon all competitors to consider the artistic calibre and peculiarity of taste of the referee, so far as his known works or his decisions in former competitions declare them, and throw in some loathed or unnecessary feature, fashioned after his heart, as a sop, like the cake to Cerberus? It cannot, I think, be denied that there will, or that the architect who most yields to it will, if not wanting in other respects, have the best chance. To have any chance, I think the competitor's aim in his design must be, not excellence, but the qualities that will be approved by the referee, whom he must keep constantly before his mind's eye, shooting neither to the right hand nor to the left of him, nor over his head.

If these views be correct, then I think the future hopes of architecture depend on there being generally at least more than one, or even two or three referees, the very highest members of the profession, engaged to decide a contest of architects; and upon their laying it to heart how great is the responsibility of the office they fill, and the immense influence for good or ill to the profession which they exert,—that, for the time at least, they guide the helm and wield the destiny of architecture. Had the British public the æsthetic instinct of the old Greeks,—if it were as accomplished and poetic a public as that of those nurses of art, Athens and Corinth, where every citizen was not only a hero and legislator, but an art-critic, and endowed with that highest degree of education and utmost human refinement, viz., a genuine perception and love of beauty; or if Englishmen and Scotsmen had that predilection for art that spread over Italy in the fourteenth and fifteenth centuries,—then the public would form the best board of referees, and the voice of the people would be the voice of God.

As Fate or Providence denies us such a tribunal, our people and their Parliamentary representatives, whatever their natural acuteness of intellect, having neither the fastidiousness of taste, nor the desire for art and beauty which characterised the Athenians of old, we should secure the next best thing to it, viz., as numerous and varied and competent a bench of judges as possible. I would have on it the critical as well as the practical element,—the man of thought as well as the man of action, who is not always a good judge of the merit of other men's works. But there should be no individual among the referees, whatever his refinement of taste, who is ignorant of architecture; as taste cannot be successfully exercised in comparing things of which its possessor has not a perfect knowledge,—a fact which I fear was overlooked in the selection of the five or six judges in the competition for the Foreign and War Offices some twenty-five years ago.

If no less than ten judges, chosen from among the flower of Grecian intellect and taste, with ten months' training for the task, and sworn to act impartially, were deemed necessary to decide who was victor in a chariot race at the Olympic Festival of the Greeks, how many more should be deemed needful to decide the relative merits of a hundred or more of architectural designs, each expressed by many distinct drawings, which is an infinitely more difficult task, how difficult a task has never been duly considered. It is far more difficult to compare and judge the relative merits of architectural designs than the relative merits of any other fine-art works,—pictures, statues, &c.,—inasmuch as the architectural designs involve important utilities as well as beauties; and have to be expressed by many different drawings. The referee has not only to compare designs one with another, but the different parts of each design to verify its homogeneousness, on which and on its truthfulness of character and expression its merit in a great measure depends. I know no task of its kind so fraught with difficulty,—which increases in proportion to the importance as well as to the merit of the designs.

The folly and danger of trusting to one referee will appear if we consider that in all kinds of art-works the soundest "judgment has its oscillations, and is a long time in settling upon the thin line of justice"; and that great critics are constantly affording new insight into the genius of authors whose rank had been thought fixed for ever. "To pass a right judgment upon compositions," says Longinus, "is generally the effect of a long experience, and the last improvement of study and observation." The revolutions of opinion in relation to architecture, both styles and examples, are too well known to need more than mention.

The improbability of any one man being found equal to the situation in question will appear, if we consider how few among the greatest men have shown themselves fitted, by comprehensiveness of mind, to give impartial judgments on works of art or literature; or who combined the intellectual keenness and profundity of the philosopher with the divine faculty of the poet. The names of those whose works prove the possession of that rare balance of imagination, and of the reasoning powers in which the perfection of the human intellect is supposed to consist; or, in other words, who possessed aught but fragmentary minds, appear but thinly strewn on the stream of history. Homer, Julius Cæsar, Dante, Da Vinci, Michelangelo, Shakspeare, Bacon, Crichton, Milton, Berkeley, and Goethe are all I can just now call to mind. How many of the greatest reputations have proved themselves, by narrowness of mind, weakness of judgment, or vulgar prejudices, unfitted or unable to do justice to their contemporaries or predecessors, and whose judgments on them have been reversed by the verdict of posterity!

Dante's great powers of imagination were not appreciated by the greatest poets for ages after his death; and that he was unable to appreciate himself is shown by his idolatry of Virgil, and admiration of other writers far inferior to himself. Nathaniel Lee, and others of Dryden's poetical contemporaries, supposed he had beaten the "Paradise Lost,"—refined the golden ore of Milton,—by his "State of Innocence, and Fall of Man," when he had ignominiously failed to equal himself. Dr. Johnson, the leviathan of literature, as he was deemed, could see little or no merit in "Tristram Shandy," "Gulliver's Travels," or "Tom Jones." The criticisms in his "Lives of the Poets" it is well known are biassed by political, religious, and even personal antipathies: with him the author of the inimitable "Elegy written in a Country Churchyard," is "a barren rascal," and Churchill a blockhead! Wordsworth and Southey were insensible to the harp of Byron, a true and great lyric poet, who, in his turn, ridiculed both, and expressed contempt for the "Excursion"; while he evidently thought Pope a greater poet than Milton or Shakspeare. Voltaire deemed the latter a sublime barbarian. Emerson, a great poet as well as philosopher, would not allow Shelley or Poe to be poets at all.

On the other hand, innumerable are the works that have not maintained the place at first assigned them by the arbiters of literary merit and genius, and that, in different degrees, have sunk in the universal estimation. It has happened to others, as well as to Macaulay to have seen "minds graceful and majestic as the Titania of Shakspeare, bewitched by the charms of an ass's head, bestowing on it the fondest caresses, and crowning it with the sweetest flowers."

All this will seem to some a far-fetched argument. But it is in reality a very direct and cogent one. If Lord Byron, who was not only a poet of established reputation, but a world-renowned poet, could not see the awful distance in merit between the bard of Twickenham and him of Stratford, and thereby proved himself unfitted to decide a competition of poets; and if Samuel Johnson, who was both poet and critic, and moralist to boot, and the idol of his generation, could not, or would not, do justice to the merit of Milton; if Emerson could see or feel no fire of genius in Shelley's "Revolt of Islam," what hope can we have of a single referee doing justice in an architectural competition, based on his being an architect of established reputation, which is all the referee is required to be in the "Suggestions" published by the Institute?

If Dr. Johnson, who generally ruled his life by the dictates of virtue and piety, was swayed by vulgar prejudices, and even by personal antipathies and jealousies, in his criticisms on the works of his predecessors and contemporaries, have we not cause to fear that any given architect, whatever his reputation, may be similarly biassed?

It appears to me that in view of such facts and the immense importance of having just issues from these most elaborate and truly costly contests,—importance to the honour and welfare of the profession, to the taste and æsthetic culture of the public, to the beauty of cities, and to the glory and joy of the great globe itself,—nothing should be omitted that could possibly be devised to secure them. Prudence, I think, dictates that here we should,—

"Make assurance double sure,"

and, if it were possible,—

"Take a bond of Fate."

I would have an appeal from the referees, however numerous, to some other tribunal.

Unless the competition system be made as true and righteous as it is possible to make it, in time to come woe will betide the architectural profession. That system must not only fail of its object to call forth excellence, but present an impediment to the progress of architecture, and become little better than a lottery or gaming-table. With all its study and practice forced into a channel in which there is no guarantee for justice, no profession could be in a more humiliating or hopeless condition. It is forbidden to advance. It is offered premiums for mediocrity,—effective drawings, and common-place designs; and these are what it has chiefly produced or will produce, under the system, which will operate as a Procrustes' bed, and do more in a stealthy way to discourage truthful architects than anything else.

"Learn to labour and to wait,"

sings Longfellow; but it will be of no use labouring in architecture, and the architectural aspirant may wait long enough. If he wait it will be with something of the hopelessness of the impotent man at the Pool of Bethesda while later comers were stepping down before him. Patience and fortitude will be in vain. Would the competitors in the chariot races and other contests at the Olympic Festival have been inspired with such high emulation had they been uncertain of justice from the judges of the games? Would the knights who contended in the chivalric tournaments which were the grand competitions of the Middle Ages have endangered their lives, though "ladies' eyes rained influence," if the acclamations of the heralds, and the clangour of the trumpets as often hailed the wrong knight as the right one?

Nothing, having relation to art, has appeared to me more absurd than the appointment of a single man to name the victor in a great public competition, except it be respectable architects submitting to it. Those who engage in competitions would not lend money without security: why should they risk that for which money itself would be inadequate security?

Such considerations and facts ought at least to suggest diffidence and humility to those gentlemen that are usually engaged as referees; and discourage any disposition to the framing of tyrannical conditions such as have hitherto disgraced the history of competitions. An architect in one of last year's discussions on the subject spoke, without disapprobation, of the effect on competitions of some referee's "iron rod," which surely must have excited disgust in more breasts than one. What right any gentleman has to wield an iron rod, in any sense of the word, over his professional brethren, I cannot see. The iron enters into the soul, as iron so employed has ever done.

In reference to second competitions, I beg to suggest that they should only occur in cases where the two or three best designs appear equal in merit, and where only clearer delineation of detail on a larger scale could relieve from the dilemma; when it would at the same time afford opportunity to the authors for giving the little, more or less, imperceptible to vulgar eyes, which constitutes grace, and enable them to embody further subtleties of thought, if they have them.

Otherwise repetition of the same design on a larger scale is no more needful than repetition of the same speech or sermon in a louder voice. The original sketch for many a great picture shows the possibility of concentrating the power of a large work on a few square inches.

I deem the public exhibition of the designs very desirable, and agree with a recent correspondent of the *Builder*, "Justicia," that it should take place before the decision. It would be of some educational value to the architectural student, and also to the public.

I think all competitions for public works should be open, and not to Great Britain only, but to all the world. If justly conducted, the highest men need not disdain to engage in them, as they may be fully assured of meeting "foemen worthy of their steel." In the chivalric contests of the Middle Ages, before alluded to, esquires were frequently allowed the honour of laying lance in rest as well as knights.

SAMUEL HUGGINS.

HIGH BUILDINGS.

WE do not expect in our structures to be able to vie with the dimensions of Nature in her works, or to build a city of the proportions of the Alps or the Apennines. The great Architect of the Universe, in his masonry, constructs on a very different scale from ourselves, his humble creatures. The pyramids of old were in degree no doubt counterfeits of a mountain, and the ancient monolith obelisks and the spires of more modern architecture emulate the lofty pinnacles which are so frequent in some rocky regions. These latter imitations, reduced to the symmetrical contours and regular forms which are the characteristic crystallisations of structural science and art, fall, of course, vastly short of the magnitude of their prototypes, but we feel, of course, no humiliation in their being so much less in scale than the edifices of Nature. We could not hope to equal the mineral kingdom in the height of its structures; but it was not formerly, certainly not till this century, contemplated by us that even our tallest buildings might have to contend for pre-eminence of altitude with the kingdom of vegetables. The trees of the old world, at any rate of any part of it with which we were acquainted, did not reach such towering heights as to vie with our loftiest examples of architecture. This is not the case now, for since the exploration of California and Australia, some races of vegetable giants have become known to the world which might look down from their topmost summits on even our loftiest spires, with, perhaps, one or two exceptions. Even these, however, may quite possibly be overcrowed eventually by some not yet discovered individuals of the big trees of California, or of the gum trees of Australia.

The Parthenon of Athens, eminent as is the place it takes in art, was, in comparison with many other remarkable structures, but a dwarf or a fairy in scale, having been but 66 ft. high to the top of the tympanum, and thus was surpassed in elevation by the less-famed temple of the giants at Agrigentum, which reached the height of 116 ft. The Trajan Column in Rome is 134 ft. high. The Obelisk of the Lateran, in the same city, as it stands erected on its lofty base, measures 153 ft. The Albert Memorial in Kensington-gardens reaches the altitude of 186 ft. The Monument of the Great Fire of London, in the City, is 202 ft. high. The Taj Mahal, at Agra, is 220 ft. Norwich Cathedral is 309 ft. The Victoria Tower, Westminster, is 331 ft. The Church of St. Isaac, in St. Petersburg, is 336 ft. The cathedral at Florence is 376 ft., and that of Chartres 403 ft. To the top of the cross on the present St. Paul's Cathedral, in London, is but 360 ft., while the top of the spire of the old St. Paul's, which preceded it in the same situation, is said to have reached the great elevation of 508 ft., in which case it was at that time the loftiest structure in the world, and has only been exceeded since by that of Cologne, which is 510 ft. St. Peter's at Rome, to the top of its cross, is 448 ft., and the apex of the huge mass of the great pyramid was 460 ft. from the plain on which it arose.

The eastern entrance great hall of the South Kensington Museum affords space on its north wall for the display on an ample scale of a large diagram of the comparative heights of these and other remarkable buildings of the world, of which there is a small version of a convenient size, which may be purchased at the guide-book and photograph stall by the side of the south entrance. The above-mentioned great diagram is rarely without spectators, which indicates the natural interest generally taken in these great achievements of raising solid masonry to such great elevations. This affords an opportunity for incidentally suggesting that if the neighbouring Royal Horticultural Society were in like manner to have a diagram produced exhibiting the comparative heights of the tallest specimens of the various trees of the world, it might be of much botanic and general interest, especially when contemplated in relation to our tallest edifices, as set forth in the diagram above mentioned.

The discovery of the so-called "Big trees" of California startled the world, and when their dimensions came to be ascertained the enthusiasm of both English and Americans sought to associate with them the names of two of their most distinguished countrymen, and they received the titles almost simultaneously of "Wellingtonia" and "Washingtonia." They have since been introduced into our own and other countries, and many of their young offspring are at present to be seen in our horticultural gardens and parks and country seats. It appears, however, now that they are even more than equalled in altitude by another class of trees in a region also colonised by our Anglo-Saxon race, namely by some of the *Eucalyptus* tribe, or gum trees of Australia. Mr. Walter Coote, F.R.G.S., in his interesting narrative of his "Wanderings South and East," published last year, in his account of an excursion he made from Melbourne, to the Black's Spur in the Plenty Range, speaks of it as possessing the loftiest trees in the world. After lauding in high terms the beauty of the bush scenery of these ranges and the gigantic scale of the tree ferns and of all the vegetable life around, he proceeds to mention these comparatively newly discovered and very lofty examples of the *Eucalyptus*. "There are not only," he says, "a few detached groves of big trees as in California, but there are thousands of these giants, the whole hill-sides being covered with them." When alluding to the Californian *Sequoias*, the proprietor of the neighbouring inn triumphantly said to me, "We can give them a hundred feet, and then exceed them." The greatest tree at present discovered was at Mount Baw Baw, and, on being measured by the Government surveyor, was found to be 471 ft. It was a "*Eucalyptus Amygdalina*." The highest tree at present standing in California, a "*Sequoia gigantea*," is only about 325 ft. In a report by Mr. Fergusson, the Inspector of State Forests, one of the fallen gum-trees is mentioned as having been found by actual measurement to be 435 ft. from its roots to where it had been broken by its fall. The broken section was 3 ft. in diameter, from which he estimated the tree, when entire, to have been over 500 ft., thus among all edifices being only equalled or exceeded by the heights of the spires of Cologne Cathedral and old St. Paul's. And quite possibly there may be some still higher examples of these trees yet to be found in Australia, and it may be noted also that in California some of the fallen and prostrate giants indicate greater heights than any of those still erect. We are

not informed to what height the ambitious tower of Babel had attained before those constructing it were scattered abroad over the face of the earth, but of our at present existing structures none, at any rate, seem to exceed in altitude some races of the vegetable kingdom.

In comparison with the size of the individual workman, we know that the structures of the coral insect vastly exceed our own triumphs, and in this respect also that our architecture is far outrivalled by those of the ants and termites, as is familiar in the pages of our various books of natural history; but the great altitude of some examples of the vegetable kingdom has been less discussed because comparatively but lately known. In a competitive point of view, however, we may be consoled by regarding the long period which is requisite for the growth of these *colossi* in attaining their complete stature, which, in the case of the largest of the Californian trees, has been computed to have been not less than 2,000 years. In respect, however, of the Australian trees we are not aware that their time rate of growth has been investigated. If this, however, bear a like proportion to their height, as in those of California, then in either case we may remark, although most of our celebrated cathedrals have taken a long time in rising from their foundations to their topmost pinnacles, that the loftiest denizens of the forest grow still more slowly, and that sap is still more deliberate in building than stone, and bricks and mortar; and thus, although Nature, even in her vegetable kingdom can equal or overtop our most majestic efforts, that she occupies a still longer period in the achievement.

ETCHINGS AT THE BURLINGTON FINE ARTS CLUB.

THE illustration of the Dutch masters of etching, which the Burlington Club has very much at heart, would have been impossible to carry out in a general collection or collections, on account of the way in which the great name of Rembrandt overshadows all the others, and renders it impossible to preserve anything like a balance of power in a general illustration of this school of art. This, as we gather from the preliminary remarks to the catalogue of the present collection, is the reason why no such attempt has hitherto been made. The Club have brought together in a previous year a splendid and representative exhibition of the etchings of Rembrandt; and this having been accomplished, "the way is now cleared" for the illustration of minor Dutch etchers. The two whose works are at present to be seen (by the favour of the Committee or of individual members) are two Amsterdam men, Zeeman and Karl du Jardin; the latter a somewhat familiar name in art, the former less so. Though the two men belonged to the same place and nearly the same time, Zeeman having been born about 1612, and Du Jardin probably some two decades later, their works are in many respects as opposed to one another as they well could be. Du Jardin was essentially an artist, and looked at his subjects, prosaic as they are in one sense, with a view to artistic effect; Zeeman appears to us to have been, considering his technical powers as an etcher, singularly destitute of artistic feeling and perception; and the value of his work in this respect seems much overrated in the catalogue remarks. The real worth of his work is of the same kind as much of Hollar's, *viz.*, topographical and historical. He was the son of an Amsterdam fisherman, whose real name was Nooms, and the artist's nickname of "Sea man" (Zeeman), from his seafaring connexions, stuck to him, as nicknames have stuck to so many artists, and was signed on most of his works. With an inherited love of docks and shipping, he illustrated largely the shipping craft of his country, then at the head of the maritime world, and has left also most interesting and evidently careful and accurate views of different scenes in the port of Amsterdam, introducing a certain proportion of architecture (which he treats with precision and clearness of line), but never, as far as we have observed in this collection, getting out of sight of the masts of the ships. His seas and skies are bad and mannered, but his ships are admirably drawn; he gives us in its completeness the old form of ships of the period, best shown in No. 32, with her great beak under the bowsprit, her built-up stern, and her masses of shrouds,—an object certainly far more taking to the eye of a painter than most of the shipping of the present day; and though the water is bad, the ships lie on it well, especially as in No. 8, where two or three craft, heeling over in a stiff breeze, have a great deal of go and spring in them. His calm-sea effects are the best, as effects, and he has a feeling for distance and aërial perspective. No. 53 is a really fine night effect, rather Rembrandtish in treatment. The views about Amsterdam and its outskirts bring the past before us, probably with complete truth as far as they go. In one corner at the upper end of the room is a most interesting group of drawings. No. 84 shows the back view of part of the town from an inlet of the docks; a long irregular row of houses and a church, and in the foreground one of the double canals, divided into two road-ways by railings fixed in the water, an incident constantly recurring in these illustrations. In No. 87 we have what might be called "windmill suburb," the side of the town where the windmills were congregated; the scene bristles with their sails. In two others we see the bridges for entering the town over the canals, and the primitive arrangement of over-head beams, swinging on centres, for pulling up the drawbridges; these are best shown in No. 85, where they are delineated with the same kind of care and accuracy that Da Vinci, in his drawings, bestows on this kind of practical detail. It is noticeable that some of the wooden bridges shown in these views are almost exactly like a type of bridge still made in Japan: a set of trestles with a curved wooden roadway carried over the top of them. In No. 3 we have the old "block houses," or fortified houses at the entry of the port, picturesque in a plain way, rising out of water which here again is all divided by fences; and in No. 4 is shown the "pest-house," one of the buildings described by Howard in his curious work on the "Lazarettos of Europe." A monochrome shaded drawing, No. 115, gives apparently a design for a title-page to some collection of drawings, and represents the building or repairing of a ship, the stern of which bears the inscription in an original French, innocent of accents or grammar, "Quelque Navieres designes par R. Zeeman, a^{n} 1656."

On the other side of the room, among the Du Jardin drawings and etchings, we are in a different world. Here everything is treated from the point of view of artistic effect. True, most of the drawings are merely representations of animals, but they are all beautifully composed, with the view of giving harmony of line and of exercising and exhibiting the artist's power of drawing and foreshortening. There are some drawings in pencil, Indian Ink, and other media; especially an admirably free and masterly one in red chalk, of cattle and figures crossing a stream towards the spectator; but the best of the works are etchings. Some of these, such as the two pigs (123) and the sheep and lamb (144), have been engraved and are well known. But there are finer things than these in the collection. We may specify the drawing of sheep and goats grouped in a mass in the centre of a landscape (138); that of the sheep and goat, with a human figure in the background (131); the two horses foreshortened, one of them lying on the ground (140), and the two horses by the plough (154). There is one scene which aims at higher interest, "The Battlefield" (136), where a horseman is pausing in his ride over the field to look at the naked corpse of a slain man; the contrast between the stiff body on the ground and the life and animation of the rider and his horse, which he has with difficulty reined in, is very striking. But, apart from this, in the quieter scenes we have mentioned, there is apparent in all something more than mere animal painting (or drawing); there is everywhere to be traced that feeling for the artistic effect and suggestiveness of line and composition which gives the higher interest to work of this kind, and constitutes the real value of Karl du Jardin.

Great Yarmouth.—The plans of Messrs. Bottle & Olley have been accepted, in a competition of local architects, for new Board Schools, Gorleston, under the Great Yarmouth School Board, for 275 boys, 275 girls, and 250 infants. A caretaker's house has been added to the scheme since the acceptance of the design.

VENTILATORS AND VENTILATION.

THE steps which, at the moment when the Metropolitan District Railway Company were supposed to have obtained an unassailable position with reference to their rights to ventilate their line, we pointed out as competent to the public, have been taken, not by the Board of Trade but by private members; and on the last day of May, in consequence, the company stopped their Bill before Parliament. A pause, or indeed something more than a pause, having been thus reached in the strife beneath the underground and the aboveground interests, we are desirous to point out that the mode in which the subject has been treated is not one that does much credit either to our scientific command of the primary function of ventilation, or to our method of scrambling through important public business. Rightly or wrongly, the public and the railway company were opposed. That being the case, many persons were ready to condemn the latter, not on any impartial review of the entire case, but on the ground of what looked like a contempt of public opinion. It is, no doubt, an awkward thing to run against the current of public opinion. It is, however, quite another matter to inquire how far that opinion is or is not altogether well informed and correct.

The ventilation of the Underground Railway is a very serious matter. It affects the comfort and, to some degree, the health of a number of persons which can only be fixed by saying that among them they take more than eighty-three millions of railway journeys in the year. Thus, on sanitary grounds alone, the question of ventilation is most important. On scientific grounds it has no less interest. The passage of two, or at the very utmost three, locomotives through an unventilated tunnel renders the air unfit for human respiration. The passage of an assignable number of trains would render it highly dangerous to life. The passage of a yet larger number would, without ventilation, leave the tunnel in a state as impassable as if it were full of water. In the short portions into which the Underground Railway through London is broken for the sake of access, ventilation, such as it is, effects itself to a certain unsatisfactory extent. In a long tunnel this cannot take place, and when the public are asked to find the money for a very long tunnel it is done in wilful ignorance of the fact that as far as our present appliances go, the question of ventilation must become most formidable from an economical point of view,—first, from the cost of conducting it, and, secondly, from the very small number of trains that could run through, if the air is to be kept respirable, and if the rate of the ventilating current is not more than the practical speed of ten miles an hour.

It is, therefore, in our opinion very highly desirable, from a scientific, as well as from an economical, point of view, that an inquiry should be conducted on this head by competent men. Why should not the directors of the Metropolitan Railways apply to the Board of Trade to appoint one or two men of science to meet their own engineers and to draw up a report that may serve as a basis for future proceedings? For ourselves, we have personally given some little time to watching the mouths of one or two of the present shafts, particularly the one in the Embankment garden between Westminster and Waterloo, and that in the Broad Sanctuary. What was the result of our observation we need not now state; but we may say that it took a very careful watch to be aware of the moment of the passage of a train. We have not seen this remark made before. We confess that the observation was unexpected; but it is one which, we think, points very clearly in the direction that we have indicated. The subject is not one to be decided by mere party feeling. As long as the public felt helpless it was unavoidable that feeling should rise high; but now, on the ground that we have indicated, it seems to us to be highly important that the subject should be considered in a manner at once impartial, scientific, exhaustive, and practical. It is not enough to say what shall not be done. What we want to know is what ought to be done.

Society for the Encouragement of the Fine Arts.—On Saturday evening the chairman of the society, Mr. Deputy Edmeston, was entertained at dinner by the council.

THE DEVELOPMENT OF ECCLESIASTICAL ARCHITECTURE IN RUSSIA.

IN a paper lately read before the Architects' Association at Berlin, Herr Wallé called attention to the little attention paid in Western Europe to the progress of building and engineering works in Russia, and dwelt on the advantages which might reasonably be expected to result from an interchange of opinions on technical matters. The Russian technical press, on the other hand, gives special prominence to what is doing in Germany and other countries.

Attention has from various causes been recently given to the question of ecclesiastical architecture in Russia. In July, 1881, the municipality of St. Petersburg opened an international competition for a church to be erected on the spot where the Emperor Alexander II. had been assassinated. When the three plans selected out of twenty-eight sent in were placed before the Emperor, he declined to confirm any of them, on the ground that although talent and skill had evidently been brought to bear upon their conception, yet none of them had been designed in the Russian style of architecture, of which numerous excellent models might be found in various parts of his dominions. This policy affects other branches of the art besides church-building, inasmuch as public edifices, both in their construction and external ornamentation, must, to a great extent, follow the general idea thus designated. The power of a Russian monarch's will is well known, and it is feared by Herr Wallé that similar consequences may result as to architecture to those which are recorded in history to have befallen Russian painting, when Iwan III. ordered all saints' pictures to be painted in the same style as the works of Andreas Rublew, a monk who lived towards the close of the fourteenth century.

It is not expected, however, that in the present instance there will be such a general following out of the Imperial wishes as that which resulted from the edict of Iwan; for, according to the admission of the leading technical journal in Russia, architects are not now able to build in the exact style of the fifteenth century; besides, there are great difficulties in fixing what is in reality the Russian style of architecture. A law of the year 1841 decided that for the orthodox churches the old Byzantine style should be selected. In the lifetime of the Emperor Nicholas a return to the older style was evinced in the Byzantine style being taken up again, in place of the Classical, or would-be Classical, school. Professor Constantine Ton built a number of churches in this revived style, those of St. Catherine at St. Petersburg and the Redeemer at Moscow being amongst the most important. The former is a three-aisled edifice, to hold 1,200, while the latter is designed to accommodate five times that number of worshippers. Its dome is 77 ft. in diameter and 224 ft. in height inside. The modest style of the openings for light is in harmony with the character of the ancient Byzantine buildings. Some of the details of the work exhibit the partial influence of Oriental art. The remark is made that the St. Catherine's Church and others of the same kind do not afford a reliable basis on which to found a style of church building; for after the old Russian type had been neglected for upwards of a century, it was impossible to reproduce with any degree of accuracy many of its detailed features.

St. Mary Church, Torquay. — The Dominican sisters here are having the choir of their church completed by taking out the floor above the present choir and erecting a mixed barrel and hammer-beam roof under the old roof, the erection of an organ-gallery in which a small choir-organ is to be placed, stalls, and several other alterations. The work is being carried out by Mr. Condy from the designs of Mr. Joseph Stanislaus Hansom.

The Conventual Buildings at Stamford Hill, belonging to the Servite Nuns, are now being extensively enlarged by the erection of chapel, sacristies, chapter-room, dormitories, play-rooms, lavatory, and chaplain's house. Parts of the new buildings are already roofed in, and the remainder, only lately put in hand, are being pushed on rapidly by the contractors, Messrs. R. & E. Evans, of Lisford-street, Peckham, under the architect, Mr. Joseph S. Hansom.

A NEGLECTED ART-EPOCH.

IT must always remain a matter for regret that the dignified and beautiful form which our national architecture assumed in the closing years of the twelfth century should have been so speedily and so completely set aside,—absorbed, as it were, by the "Early English," or First Pointed style of the succeeding century: that the "Transition" was, in short, but too truly what its name suggests, and not, as one would now wish that it had been, a halting-place in the long procession of the styles.

In examining from our present standpoint the mighty march of Mediæval art, we see, clearly enough, that such a halt was in the nature of things impossible. The problem presented to the builder was such that every success but opened the way to further successes in the same direction. Each endeavour carried with its accomplishment the possibility and the promise of further achievements, and at last the dexterity of the architects and their conscious mastery over the mechanical principles involved in their art got the better of their discretion, and blunted their artistic sense, until architecture became a mere plaything in their hands,—a vehicle for the pleasurable exercise of unrestrained power.

During the earlier years of the reign of the second Henry the several races which peopled the kingdom were welded into one distinct nationality, and all thenceforth became Englishmen. The national feeling which accompanied this amalgamation expressed itself in the arts. Architecture was emancipated from foreign influences, and the last quarter of the twelfth century saw us in possession of an architectural system of singular beauty, and one which was, in addition, exclusively our own. It succeeded in combining in equal proportions the essential qualities of all great art, to wit, power and refinement, masculine strength and feminine grace. The *power* of building may perhaps have been more fully felt in the rude Norman work of an earlier date, and the *refinement* of which the art is susceptible may have been carried somewhat further in the "Early English" work at its best; but the two qualities had only once before co-existed, each in its highest perfection, viz., at Athens, in the fifth century before the Christian era, and never again, after the twelfth century closed upon the works of the great Transition architects.

The failures of the Norman builders,—failures more numerous than our indiscriminating worship of the past will sometimes let us admit,—had taught their successors to look to the security of their foundations, to bestow more care upon the hearting of their walls and piers, and on the bedding and bonding of their ashlar. A growing familiarity with the nature of the materials at command and a growing knowledge of the scientific use of them are apparent in the lighter and loftier proportions of the works of the time.

The love of broad surfaces and unbroken lines gave nobility and repose to the general design, while the increasing skill of the sculptors, who now went direct to nature for inspiration, gave meaning and interest to the details. The clumsy vulgarity of the Norman ornamentation wholly disappeared. The wall-diapers and surface decoration are of remarkable variety and excellence, and the profiles of the mouldings, strings, bases, imposts, archivolts, are of a quite Grecian purity, and have never been surpassed for grace and propriety.

Indeed, there are many evidences,—as in the care with which the long vertical lines of piers and pilasters were guarded against having a top-heavy look by narrowing and retiring each successive stage at the levels of the strings,—and the anxiety and skill with which the angles of their buildings were studied, as they cut hard and solid against their luminous background of sky,—that much of the delicate perception of the Greek architects was no stranger to our countrymen of this date.

And everywhere the sculpture and ornament was strictly subservient to the architecture, brightening and accentuating special points in the constructive scheme, and while preserving its dignity and repose, enlivening the whole by an agreeable play of light and shade, and providing in a very real sense "Sermons in stones, and good in everything."

It must be borne in mind that by the end of the twelfth century the true principles of vaulting had been arrived at and put in practice. That the Roman barrel vault, with its unnecessary and overpowering mass of material, had been superseded by the arching ribs with their thin and light spandrel filling. That the pointed arch had given the builders the power of spanning openings of varying widths with arches of a uniform height, thus avoiding the structural failures incident to the semicircular form of arch, and enabling them to dispense with the ungainly stilt which that form of arch drove them to adopt under the older system. The constructive scheme had been developed to the full,—and there were no difficulties in the way of carrying into execution the largest works which the necessities of the time demanded,—and the rapid improvement in the sculptor's art, which the abandonment of the conventional models and a recourse to nature had brought about, rendered it possible to adorn the architecture with ornament and imagery of marvellous beauty and propriety. But when all things promised a series of buildings, in which these accomplishments should have full sway, an inordinate passion for mouldings set in, and appeared to engross the whole attention of the builders. Endless successions of rolls and hollows,—their junction emphasised by narrow fillets,—occupied countless masons. Fortunately the carver's skill found room to expatiate, and the foliage which enriched this special phase of architecture is, and will always be, its chief claim to our regard. But it should have been employed on works having the nobler characteristics of the preceding style. The newer manner was deficient in breadth, and architecture for the first time became an affair of lines. Beautiful it no doubt was, but the beauty was of a feminine type. "Hyperion's curls," perhaps, but not the "front of Jove," —and the further it departed from the earlier method the greater was the loss of that grandeur of mien which seemed to have an affinity to the sacred idea which inspired it.

It is not a little strange that in all our revivals the revival of the particular type above adverted to has not been seriously or persistently attempted in all its integrity. We have reproduced a version of the Norman, but without success. We could not bring ourselves to make the work deliberately rude and deficient in technical excellence to match the older specimens which were unintentionally so; and the mechanical finish which we gave to our work robbed it of the naïveté which was the principal charm of the old. Our modern Norman has a prim cast-iron look; its essential characterists are unproducible in our day. Mass,—prodigal, uncalculated mass of material, —is its first condition of success, and both space and cost are almost always against its modern use. The revived Early English was not altogether a success, and the style which was in vogue in the middle of the fourteenth century has, on the whole, been the favourite with the revivalists. The later "Perpendicular" has had and has still its votaries, and there are even those nowadays who fasten with satisfaction on the accidents of an effete and moribund style of a still later date, the mere decay and putrefaction of what was once a living art.

But is it too late to "try back"? Perhaps not. At any rate, it will not be without interest if we examine the claims of this "Transition" manner for modern uses.

One necessity of modern building appears to be the lintel or beam. This feature, which is generally thought to differentiate the Classic and the Gothic systems, is really at the bottom of all the controversies as to the respective suitability of each. The various economies which condition modern building, and especially the dominating economy of space, compel us often to use the lintel and to reject the arch. But the "Transition" architects frankly and freely used the lintel whenever they found its use desirable or expedient. Moyse's Hall, at Bury St. Edmunds, is a case in point. The square-headed windows there have quite a modern look, and it is only after a close examination that one is compelled to admit that they are part of the original structure. The many old fireplaces still extant with horizontal heads show how artfully they were constructed of small stones, and how entirely the form which was considered the desirable one was accepted as the ruling condition to which all other considerations gave place. By turning an arch over the lintel (instead of under it, as in the Renaissance work) and enriching the tympanum, both the artistic and constructive re-

quirements are consulted. The lintel is relieved from weight and the sculpture is protected from the weather. The use of the lintel is therefore no bar to the adoption of the style suggested.

Again, the cry is nowadays for more light. The subdivision of window openings by mullions and tracery has always been a stumbling-block in the way of the revival of Gothic architecture for any but ecclesiastical purposes. The difficulties connected with the subject have not been entirely got over at the new Courts of Justice; and the shutters and blinds, and the rest of the modern appliances which it is useless to attempt to avoid, have tried the skill and ingenuity of its architect; and sometimes have been too much for him. But the ample, undivided, window-openings of the "Transition" are in effect the windows of the Renaissance. Romsey Abbey Church and St. Paul's Cathedral are, in this respect, alike, and ancient and modern art meet here upon common ground.

An incidental advantage which a reversion to the "Transition" manner would possess is the field offered for stained glass. It is an open question whether the mullioned and traceried windows of later styles have not done more harm than good to the art of the glass-painter by breaking up his work into formal strips and cutting across by dark bars of stone. The modern feeling for stained glass is certainly tending towards a compromise between the old archaic work and an easel picture, and the beautiful examples which such artists as Mr. Holliday and others provide will certainly confirm the taste for wide and uninterrupted window openings.

If, moreover, internal polychromatic decoration, in mosaic or otherwise, is to be a feature of the public buildings of the future, it is undeniable that the ample unimpeded surfaces which the early buildings provide leave the artist quite unfettered in the exercise of his art.

Another point in favour of the early work is the readiness with which it adapts itself to the employment of any and every material. There are styles which necessitate the use of freestone and involve an amount of skilled, and therefore costly, labour, which is a serious hindrance to the projects of the architect.

The Transition style is, however, completely suited to the humble and ubiquitous brick. The early builders selected small stones for their work, and the still smaller bricks would give a scale to the work which would enhance its native dignity, and add to its effect. Terra-cotta, which resists the atmosphere of our towns better than any stone, is pre-eminently adapted to the "Transition" ornamentation, and we have recently had conspicuous proofs of its successful use in work not widely dissimilar in style from that now advocated.

There is still another reason why it would be well to fall back upon this twelfth-century type; its "note" is just that self-restraint,—that feeling of reserved power which is present in all great art,—the want of which is the bane of most of our modern work. There is just now an unwholesome tendency to run riot in the use of ornamental forms which have no beauty in themselves, and have no relevancy to the architecture which they vulgarise and encumber. The twelfth-century work can appropriate the highest reach of the sculptor's art; or it can content itself with the simplest surface diaper, or it can afford to dispense with both. But whether the adornment it uses be of the one class or of the other, it must be sternly limited to the conditions of the architectural scheme; and a study and reproduction of the spirit of the ancient examples would, if it had no other value, furnish that *discipline* which the works of the present age proclaim aloud to be everywhere sorely wanting.

Borough Surveyorship, Chesterfield.—A special meeting of the Chesterfield Town Council was held on the 31st ult. to consider the applications for the post of borough surveyor. There were sixty-eight applications, and it was eventually decided to select the following three local candidates to appear before the Council when the appointment is made:—Mr. Walter Stanton, architect, Chesterfield; Mr. G. Roper, jun., architect, Chesterfield; and Mr. F. D. Clark, surveyor to the Newbold Local Board, Chesterfield.

RURAL SANITARY AUTHORITIES AND THEIR BY-LAWS.*

THE Board of Guardians, who are appointed to act as the rural sanitary authority for the parishes contained in their union, are empowered by the Public Health Act of 1875, section 157, to make by-laws relating to new streets and buildings,

(*a*) With respect to the level, width, and construction of new streets;

(*b*) With respect to the structure of walls, foundations, roofs, and chimneys of new buildings, for securing stability and the prevention of fire, and for purposes of health;

(*c*) With respect to the sufficiency of the space about buildings to secure a free circulation of air, and with respect to the ventilation of buildings;

(*d*) With respect to the drainage of buildings, to water-closets, earth-closets, privies, ashpits, and cesspools in connexion with buildings, and to the closing of buildings, or parts of buildings unfit for human habitation, and to prohibition of their use for such habitation; and

(*e*) As to the giving of notices as to the deposit of plans and sections by persons intending to lay out streets or to construct buildings; as to the inspection by the sanitary authority; and as to the power of such authority to remove, alter, or pull down any work begun or done in contravention of such by-laws.

In order to assist the sanitary authorities in framing these regulations, the Local Government Board drew up a series of regulations, which are known as the Model By-laws,—not, I take it, on account of their absolute perfection, or that their authors thought them impossible of improvement, — but they were intended as a building code, from which certain sections could be taken and adapted to suit the requirements of particular localities.

In a circular letter addressed to sanitary authorities by the Local Government Board, dated 25th July, 1877, which was sent with a copy of the Model By-laws, several interesting explanations were given, as follow:—

"It will be seen that the model series contain no by-laws specifying provision for the sewerage of new streets, and the reason for this is that the conditions which such by-laws must satisfy are to so great an extent dependent upon the varying circumstances of different localities. The Board do not anticipate that inconvenience will result from the absence of satisfactory by-laws with respect to sewerage, for it may be doubted whether any powers which, under such by-laws, may be lawfully assumed by sanitary authorities will, as regards extent and efficacy, compare with powers which they derive from the express provisions of the Public Health Act.

Frequent applications have been made to the Board for confirmation of a by-law prescribing a minimum height for habitable rooms, and it has been sought to justify such a provision as being a by-law with respect to ventilation, and being authorised by section 157 (3) of the Public Health Act, 1875.

The form of by-law generally proposed has been regarded as open to objection upon several grounds, and the important question as to whether the requirement of a minimum height for habitable rooms can be enforced by means of a by-law with respect to ventilation under the enactment above mentioned suggests so many serious considerations that the Board have decided to submit a case for the opinion of the law officers of the Crown upon the numerous points which have been raised in connexion with the suggested by-law."

The opinion of Sir Henry James and Sir Farrer Herschell, given in the tenth annual report of the Local Government Board, was that an urban sanitary authority has no general power under the 157th section of the Public Health Act, 1875, to make by-laws regulating the height of rooms for the purpose of thereby securing improved ventilation. There may, however, be cases where reasonable regulations made with reference to the mode of ventilation would necessitate the rooms being of a certain height.

Taking the by-laws in the order in which they are given above, I propose to briefly glance at the heads of the various sections, and as I presume most of the gentlemen present are well acquainted with the by-laws, you will be able to follow me. In reference to the interpretation of terms, the definition of party-wall as "a wall forming part of a building, and being used or constructed to be used in any part of the height or length of such wall for separation of adjoining buildings belonging to different owners, or occupied, or constructed, or adapted to be occupied by different persons," has given rise to several discussions, as probably in its strict application it would require several of the internal walls of a house to be treated as party-walls. It would be interesting to know what regulations would govern the alteration of party-walls, as, of course, the rules used in the metropolis have no force in sanitary authority districts. The clear definition of a topmost story makes the thickness of walls greater than under the Metropolitan Act.

The list of exempt buildings includes Government buildings. Railway buildings and canal buildings, when built for the purposes of the business of the companies, are exempt, but their dwelling-houses are, of course, subject to the operations of the by-laws.

With respect to the construction of new streets, it will be seen that the by-laws do not interfere with the construction of *culs-de-sac*, but in other respects the regulations are very carefully drawn to prevent the formation of narrow alleys.

Section 53, which requires a sufficiency of space in front of a building of not less than 24 ft., also assists in keeping the villages from becoming overcrowded. With respect to the structure of walls, &c., it is required, under section 9, that all filth shall be removed from foundations; and under section 10, that the site shall be covered with concrete at least 6 in. thick. There have been a great many objections raised to this section as unnecessary on some soils, but I think that it is now generally agreed that, as all soils are more or less pervious, it is a good section to insist on in all cases.

A very useful section has been added to the above, requiring the site of a building which has been previously excavated as a clay-pit, or for other materials, to be raised with suitable material to form a stable and healthy substratum.

The regulation with regard to the construction of walls would, perhaps, be better if the proportion of lime to sand were given for the mortar. Two sections have been added for hollow walls, which require the upper side of all woodwork which may project into the cavity, to be protected with lead or other suitable material; and a section for half timber walls, which requires the space between the timber to be filled in with brickwork, and a thickness of at least 4½ in. of brickwork shall be placed at the back of every portion of timber.

The party-walls of half timber houses must be constructed in accordance with the requirements of the by-laws, and project at least 1 in. in front of any timber framing in any adjoining external wall. I do not recollect ever having seen this carried out in the charming designs that are exhibited at the *conversazione*, and in several other points I have noticed a lofty disregard for Building Acts and By-laws. As the By-laws are being rapidly adopted all over England,—in a short time I have little doubt that they will be almost universal,—it would be as well, I think, if the various requirements were borne in mind when the designs are being worked out. I may be met by the objection that there were no restrictions with regard to building in the best periods of architecture, and that they hamper design and limit experiments. It is a great drawback, doubtless, that our canon of taste is a reference to work carried out under such different conditions.

The 13th section, requiring walls to be true and plumb, does not, as some have supposed, prevent the construction of projections: it is simply intended to apply to careless workmanship.

With regard to section 17, regulating the position of the damp-course, viz., "6 in. above the surface of the ground adjoining such wall and beneath the level of the lowest timbers," a proviso has been added requiring the walls of basements to be built hollow, with 2½ in. cavity, and carried up 6 in. above the surface of the ground, and two damp-courses, one at the base and one of the top of the hollow wall. In the case of shops, where the floors require to be nearly on a level with the ground, a small dry area, 6 in. below the level of the damp-course, can be formed to meet this section.

Section 18. The height of a story is measured

* From a paper by Mr. H. D. Appleton, read before the Architectural Association on the 1st inst.

from the upper surface of the floor of the story to the upper surface of the floor above; this is a point that is often overlooked, as most people think the height of a story is the height of the room; it will be seen that a room enclosed with 9 in. walls cannot be 10 ft. high; it also affects the construction of the walls, as the sets-off have to be made at the top of the joists, not under the plate, as is usually done.

Sections 19 and 20 regulate the thicknesses of walls, and they all run a little thicker than in the Metropolitan Building Act, owing to the definition of a topmost story, and a regulation that a 9-in. wall does not comprise more than two stories.

Section 22 applies to other building material than brick.

Section 23 regulates openings in external walls in the case of corner shops without a pier at the angle; the distance of the piers must be within 3 ft. of the corner or angle of the street.

Section 24 requires all woodwork to be set in reveals 4½ in. from the face of the wall, except shop-fronts, loophole framing, or, of course, houses built of half timber, in accordance with the by-laws.

Section 25 requires parapets to external walls when the walls are within 15 ft. This is sometimes modified by allowing buildings under 30 ft. to be exempt from this by-law.

Section 26, requiring parapets to all party-walls, is sometimes modified in the case of small dwelling-houses under 30 ft. in height by allowing the party-wall to finish under the tiles or slates of the roof, the tiles or slates being bedded on the wall in mortar or cement, and no lath, timber, or woodwork extending across any part of such wall.

This proviso, no doubt, is a source of great comfort to our artistic friends, who lament most bitterly when they are obliged to cut up their effective roofs with parapet walls, sometimes intersecting gables in a most interesting manner.

Sections 27 to 34 relate to the construction of walls, parapets, recesses, and bond timber in walls, templates, and bearing of girders.

Section 35 requires the open spaces inside partitions or between the joists to be filled up with brickwork. This is to prevent the rapid spread of fire.

Sections 36 to 51 relate to chimneys. Amongst other regulations they require every copper flue to be 4½ in. thick. This is a deadly blow at one of the favourite pieces of construction of our friend the speculating builder.

Section 52 requires all roofs, &c., to be covered with incombustible materials. This prohibits the use of thatch.

Section 52A provides that all eaves shall have gutters and stack-pipes.

The regulations with respect to the sufficiency of the space about buildings to secure a free circulation of air, and with respect to the ventilation of buildings.

I have already alluded to the section requiring a space of not less than 24 ft. in width throughout the whole line of frontage. This space must never be affected by subsequent alterations; the only buildings allowed are porticos or fence walls not exceeding 7 ft. in height.

Section 54 regulates the space in the rear of the house, which is governed by the height of the building, not the number of stories, and this space must extend laterally throughout the entire width of the building. The minimum distance of 10 ft. for this space affects the regulation for the construction of a privy, which, through the section, cannot be more than 6 ft. from the house.

Section 55 provides that a sufficient number of windows shall be made opening on to these air-spaces; and section 57 requires all windows to be at least one-tenth of the floor area of the room, and so made that one-half may be opened, and such opening must extend in every case to the top of the window.

Section 58 requires an air-shaft of an area of 100 square inches in all rooms without chimneys.

These regulations are well worth the careful consideration of the members of the Classes of Design, as it is on these points that I have often noticed their designs could not be carried out under the By-Laws.

Section 59 is as follows:—Every person who shall erect a new public building shall cause such building to be provided with "adequate means of ventilation." This throws a dreadful responsibility on the sanitary authority. Fancy a body of gentlemen not specially trained being suddenly called on to decide the nice question of what constitutes adequate means of ventilation for a public building!

With respect to the drainage of buildings, section 60 requires a subsoil drain to be laid in when necessary, such drain to be provided with a properly-ventilated trap before being connected with the soil drain.

Section 61 regulates the level of basements, requiring them to be at a level above the sewer, so as to allow of their being properly drained. This section is rather difficult to carry out when there is no sewer, as it entails the construction of the cesspool at such a depth that it is very expensive and difficult to empty.

Section 62, regulating the construction of drains, is very important, and it may be noticed that the diameter of the soil drain is to be not less than 4 in., small drains being just now in fashion. The bed of concrete required for the drains is to prevent their sinking when the ground above is rammed in.

Section 63, requiring a trap in the drain within the curtilage of the building and as close to the sewer as possible, has to be slightly modified when the house is built on the edge of the path, as, in order to ventilate the drain on the house side of the trap, the trap must be laid under the path.

Section 64 requires all junctions to be Y-junctions.

Section 65 contains an elaborate description of two methods of ventilating the drains, to which some objections have been taken, the difference between the two methods being whether the inlet-shaft is placed near the sewer or at the other extremity of the drain. The principle of the section is that all drains must have two untrapped openings, at least; one to act as an inlet and the other as an outlet shaft. The outlet shaft is to be not less than 4 in. in diameter, and a continuation of the soil-pipe is allowed. It is very undesirable to allow rain-water pipes to be used as outlet-shafts, as the gas is blown under the slates and into the houses.

In section 66, the construction of the soil-pipe is carefully laid down, also waste-pipes and slop-sinks.

Section 67 regulates the position of water-closets. It is required that one of its sides shall be an external wall. This is necessary in order to comply with the following section, which requires all water-closets to have a window opening in an external wall not less than 2 ft. by 1 ft., and, in addition, an air-brick, to ensure movement in the air.

Section 69 regulates the water supply to closets and the form of the apparatus.

Sections 70 to 79 deal with the construction of earth closets and privies in a most exhaustive way.

Sections 80 to 85 deal with the construction of ash-pits.

Sections 86 to 89 deal with the construction and position of cesspools.

In sanitary authorities' districts these clauses are always very much discussed, as the minimum distance of 50 ft. from a dwelling-house or place in which any person may be employed is very often very difficult to get. It is curious that though the section prohibits the construction of a cesspool within 50 ft. of a dwelling-house, it does not prevent the erection of a dwelling-house within 50 ft. of a cesspool.

The construction of water-tight cesspools is insisted on in section 89.

In respect to the closing of buildings unfit for habitation, which have been erected after a certain date, section 90 gives the sanitary authority power to close them.

With regard to the vexed question of giving notices and depositing plans of proposed new roads and houses, this, I believe, is looked upon by many as a very vexatious requirement; at the same time, there are so many points which are regulated by these by-laws, and which without the plans it would be so difficult to trace, that the trifling expense of providing an extra set of tracings is very little to complain of. The sanitary authority are, by section 158, obliged to signify their approval or otherwise of the intended work within one month after the notice, but they cannot compel the builder to wait until they approve the plans before commencing building; but, of course, in the event of the buildings not being in accordance with the requirements of the by-laws the builder must alter them.

THE ARCHITECTURAL ASSOCIATION.

THE concluding ordinary meeting of this Association for the present session was held on Friday, the 1st inst., Mr. E. G. Hayes, President, in the chair.

Three gentlemen were nominated for election as members, and a vote of thanks was accorded to Mr. Goymour Cuthbert for conducting a party of the members over the new Royal Courts of Justice Chambers, as mentioned in our last.

The Association Travelling Studentship.

The following report of the judges in this competition was read:—

To the Committee of the Architectural Association.

Gentlemen,—In accordance with your instruc tions, we have carefully examined the five sets o drawings submitted in competition for the Architectural Association Travelling Studentship, and have much pleasure in stating that the whole of the work sent in is highly satisfactory. The care and skill exhibited in the execution of the drawings testify to the great value of the studentship as a means of inducing the members to study old work, and thus qualify themselves for other and more important contests at the Royal Academy and the Institute. As we have no hesitation in saying that any one of the five sets of drawings is worthy of the Studentship, our task of selection was not an easy one. We are, however, unanimously of opinion that the Studentship should be awarded to Mr. J. Gibbons Sankey, whose work is highly meritorious, especially in the freehand drawings, which exhibit a great amount of feeling for old work. We would recommend that the second prize of 5*l.* be given to Mr. G. G. Wallace, and that "Honourable Mention" be awarded to Mr. G. G. Woodward.

R. PHENE SPIERS.
ASTON WEBB.
May 26. RICHARD C. PAGE.

Election of Officers for Session 1883-4.

Messrs. Jones and Whichcord (jun.) were appointed scrutineers of the voting-papers, and on their return later in the evening they re-reported the result to the chairman, who announced that the following gentlemen had been elected, viz.:—

President.—Mr. Cole A. Adams.
Vice-Presidents.—Messrs. H. H. Stannus and F. E. Eales.
Committee.—Messrs. F. T. Baggallay, A. J. Gale, T. Garratt, J. A. Gotch, F. Hemings, H. G. Turner, E. B. l'Anson, C. R. Pink, H. W. Pratt, and V. Trubshawe.
Treasurer.—Mr. J. Douglass Mathews.
Assistant-Treasurer.—Mr. A. Conder.
Secretaries.—Messrs. W. H. Atkin Berry and H. D. Appleton.
Librarian.—Mr. R. L. Cox.
Assistant-Librarians.—Messrs. W. Burrell and J. C. Carter.
Solicitor.—Mr. Francis Truefitt.
Auditors.—Messrs. W. F. Huxley and G. A. Pryce Cuxson.
Registrar.—Mr. Thomas H. Watson.

Mr. H. D. Appleton read a paper on "Rural Sanitary Authorities and their By-Laws," the substance of which we print.

In the discussion which followed, the Chairman, and Messrs. Gotch, Farrow, Berry, and other members took part. Reference was made to what were stigmatised as the unfair efforts made by some surveyors to local authorities to get commissions to erect buildings entrusted to them on the plea that "*their* plans were sure to pass the Board," it being insinuated that the plans of private practitioners were not likely to do so without much trouble and delay. It was further alleged that the real reason why some local authorities were so exacting in the matter of requiring complete sets of drawings or tracings was that the surveyors to those bodies desired to appropriate the ideas of the architects, in order that they might the more successfully get all the work of the place in their own hands. The arguments *pro* and *con.* for a system of building by-laws applicable to the whole country were referred to, the balance of opinion apparently being that such a general code would be impracticable, in consequence of local differences as to materials, &c. Some sad instances of ignorance, if not of criminality, on the part of country builders were referred to. In one case mentioned as coming within the experience of the speaker, a cesspool which had been specified to be built of brick and cement and rendered with cement internally, so as to be watertight, was opportunely visited by the architect or the owner, who found that the intended cesspool had been built "dry," *i.e.*,—merely lined with bricks without the use of any cement or mortar whatever. The work was

being rapidly arched over at the time of the visit, and in reply to a question put to him as to whether the surveyor to the Local Board had seen it, the builder replied, with a naïveté which would be amusing were it not suggestive of painful misgivings as to the construction of other cesspools, "*Oh no; we didn't mean him to!*" Mr. Atkin Berry observed that no apology was necessary for bringing the important subject dealt with by the paper before the Association; nay, it was very bad policy for young architects to affect to despise and ignore the subject of sanitation, especially so far as it related to buildings and their details. Those who hoped to succeed as architects could not too soon give their attention to the principles of house sanitation. It would be far better to acquire some knowledge of the subject before entering upon practice than to have to acquire such knowledge by costly and painful failures after they had commenced practice. Mr. Appleton, in replying on the discussion, referred the members for further information on the subject to a useful book called "Annotated Model By-Laws," published by Messrs. Knight.

Mr. Stannus, in moving a vote of thanks to Mr. Hayes, the retiring president, spoke of the business capacity, courtesy, and impartiality he had shown in conducting the business of the Association during the past year. His business capacity was necessarily largely displayed in committee, but his courtesy was known to all; while his impartiality was illustrated during discussions by the even-handed balance which he held between the most rabid Goth on the one hand, and the most licentious Classicists on the other.

The motion was carried by acclamation, and votes of thanks were accorded to Messrs. Eales and Berry, the secretaries, and to Mr. Hampden Pratt, the librarian.

It was announced that the annual dinner of the Association will be held at the Holborn Restaurant on the 22nd inst., and that the fourteenth annual excursion has been fixed to take place from the 13th to the 18th of August, the neighbourhood to be visited being South Somersetshire, with Yeovil as head-quarters.

SALE OF BUILDING SITES FOR ARTISANS' DWELLINGS.

LAST week eight freehold building sites for artisans' dwellings were offered for sale at the Auction Mart, by order of the Metropolitan Board of Works, who had from time to time purchased the several sites under the provisions of the Artisans' and Labourers' Dwellings Improvement Acts. The sites offered contained together an area of upwards of six acres. Two of the sites are in Marylebone, near the Edgware-road railway station of the Metropolitan Company; five sites are in Essex-road, Islington; and the remaining site is in Whitechapel. There was a very numerous attendance at the sale. The first site submitted comprised an area of 38,769 superficial feet, approached from the Edgware-road, and having three frontages, one of the frontages being 284 ft. in length, on the north side of a new street intended to be formed by the Metropolitan Board; whilst the two other frontages were stated to be respectively 131 ft. and 190 ft. in length. Mr. Reid, the auctioneer, in submitting the site, observed that it had cost the Metropolitan Board 20,000*l.*, or nearly 10s. a foot. Having adverted to the constantly increasing value of land in the neighbourhood for building purposes, he invited bids, when 3,000*l.* were offered, and 7,200*l.* having been reached, he observed that if there was no further advance the site would have to be withdrawn, and no higher sum having been bidden, the site was withdrawn accordingly. The next site offered, adjoining the last-named, contained 10,915 ft., having two frontages of 179 ft. and 57 ft. in length. The cost to the Metropolitan Board was stated to have been about 6,000*l.* There was an active competition for this site, which was sold for 3,000*l.*, one of the conditions being that the purchaser is to expend not less than 7,000*l.* in the erection of dwelling-houses or lodging-houses. The sites in Essex-road, Islington, were next offered in succession, the first site submitted containing 20,946 ft., having a frontage of 321 ft. on the north side of Dibdin-street, which the Board intend to widen to 30 ft. The site was sold for 1,550*l.*, the sum of 12,000*l.* to be expended in the erection of dwellings. A site in Essex-road, immediately opposite the preceding site, and containing 23,800 ft., having three frontages of 324 ft., 304 ft., and 47 ft., was next offered and sold for 1,800*l.*, 14,000*l.* to be spent on buildings. An adjoining site, containing 43,049 ft., with two frontages of 323 ft. and 174 ft., was withdrawn at 3,200*l.*; as also were the two adjoining sites next offered, one of which containing an area of 49,832 ft., withdrawn at 3,700*l.*; and the other, containing 38,800 ft., withdrawn at 2,850*l.* The last site offered contained an area of 42,417 ft. in Goulston-street, Whitechapel High-street, with two frontages of 486 ft. and 147 ft. The auctioneer announced that this site cost the Metropolitan Board of Works 55,000*l.* The The highest offer being 9,450*l.*, the lot was withdrawn. The aggregate proceeds of the sites sold amounted to 6,350*l.*

COLOGNE CATHEDRAL.

ARRANGEMENTS have lately been carried out for obviating danger from lightning as fully as possible. In addition to the lightning-conductors placed last year upon the summits of the towers, the roof and the ridge-turret have now been provided with three communications. The connexion of the four lightning-conductors has also been arranged.

In order to diminish risk from fire, the temporary wooden galleries used in the middle aisle for purposes of communication have been removed. They are replaced by massive passages which will allow of fire-extinguishing appliances being used in case of a conflagration taking place in the roof.

The Tyrol Stained-glass Works at Innspruck have been occupied in preparing the windows for the lower portion of the western towers. The placing in position of the windows in the southern tower is (according to the *Cologne Gazette*) now being proceeded with, while in the northern tower there only have been executed the two western windows. It is intended to complete the two northern windows within a year from now.

The final removal of the building works, offices, &c., in the neighbourhood of the cathedral is now taking place.

WOOD-STONE.

THE manufacture of this new building material is assuming considerable dimensions in the United States. It differs from brick made of ordinary clay by not being brittle and hard, but porous, and by wearing out the tools employed in cutting or shaping it very little more than wood. It is produced in large blocks, which are cut up according to what is necessary or desired. The method of producing the material is very simple. One part of kaolin clay is mixed with from one to three parts of shavings, and the mixture reduced to a sort of pulp. On becoming solid this is cut into blocks or plates, which, when dry, are put into stoves heated to white heat, by which the shavings are burned up leaving behind a more or less porous material. Wood-stone is fireproof, and is only half the weight of ordinary brick, while it can be worked with the same ease as wood. It is found particularly valuable for party walls, vaults, and so forth.

THE POLYTECHNIC HIGH-SCHOOL, CHARLOTTENBURG.

ON the busy road leading from Berlin to Charlottenburg, near the boundary of the two towns, but within that of the latter, there has been in course of construction during the last four years an immense edifice,—the buildings intended for the Polytechnic High-school. Its size is of such large proportions, exceeding considerably the square of the Berlin castle, that it has been humorously called Technicumpolis. In 1876 the Prussian Government and Parliament finally resolved to develop the old Bauakademie into a technical high-school by enlarging its scope of teaching, and, at the same time, to erect a new building, the former old building academy, a work of Schinkel's, being too small for the purpose. In order to carry out the undertaking in the most suitable manner, Geheimrath Stüve and Professor Lucae made a journey of inspection to the polytechnic high-schools of Germany, Austria, and Switzerland, after the completion of which Professor Lucae was instructed to draw up a plan of re-organisation and a design for a new building. At the same time, a site near the Hippodrome at Charlottenburg was selected as the most suitable. Naturally, the question of site,—as with all public buildings of Berlin,—had caused much disturbance of mind and delayed the work.

Meanwhile, Professor Lucae had died, and Baurath Hitzig had been charged with completing the plans. In his hands, the form of the façade was considerably altered, the axes of the wings and centre portion having been lengthened; but by this change the dimensions could be increased. In the fall of 1879, building operations were commenced, and completed two years later, as far as the walls were concerned. Part of the edifice is now finished, and will receive shortly the Berlin Art Exhibition, for which the provisional building in the Cantian-platz was found to be too dangerous, and in the autumn of this year the edifice will be given over to its intended use as a technical high-school. That academy will consist, under the direction of a rector and a pro-rector, of five sections,—for architecture, civil engineering, mechanical engineering, naval architecture, chemistry, and mining. It was originally intended to unite the Prussian Mining Academy (Bergakademie) with the High School; but this intention has been abandoned, a separate building having been erected for the Academy in the Invalidenstrasse.

The new edifice of the Polytechnicum (of which we give a view in this week's *Builder*) consists of a centre portion and two wings, that to the left being intended for architecture, that to the right for engineering, the middle portion containing the aula, library, and offices. The total length of the building is 948 ft.; its depth, 299 ft.; its height, 85 ft. The façade has been used by the architect, Baurath Hitzig, to show his skill in using Renaissance forms, a treatment improved by a judicious employment of carving and sculpture. The wings contain, in medallions placed in the projectures, the emblems of the sciences to the teaching of which they are devoted, niches being provided over them for receiving the statues of eminent architects and engineers. The centre portion of the building is flanked by two risalites, in which Corinthian columns run through the two upper stories. On the ground-floor are three large portals, and on each side open windows with breastwork, upon which will be placed busts of eminent men. But the principal adornment of the centre building are eighteen figures representing various handicrafts, placed on pedestals over the axis of the columns in the high attic story over the principal moulding. They have been executed by well-known Berlin sculptors.

The new Polytechnicum is one of the chief ornaments of Berlin, but suffers from one defect. It is designed on much too large a plan, a mistake made in the case of many other new buildings of the capital. When the project of the edifice was under consideration, the building and trade academy numbered 1,600 students, and it was anticipated that this number would increase rather than decrease. Owing, however, principally to the overcrowding of the technical professions, the latter has actually taken place, and it will thus be some time before the advantages here placed at the disposal of the young architect and engineer will be fully utilised.

No. 193, FLEET-STREET.

THE new building, which we this week illustrate, will form the south-west angle of Chancery-lane, the site of the old building well known for so many years as the premises of Mr. George Attenborough, jeweller and pawnbroker, having been set back to the present line for the purpose of widening Fleet-street at that point.

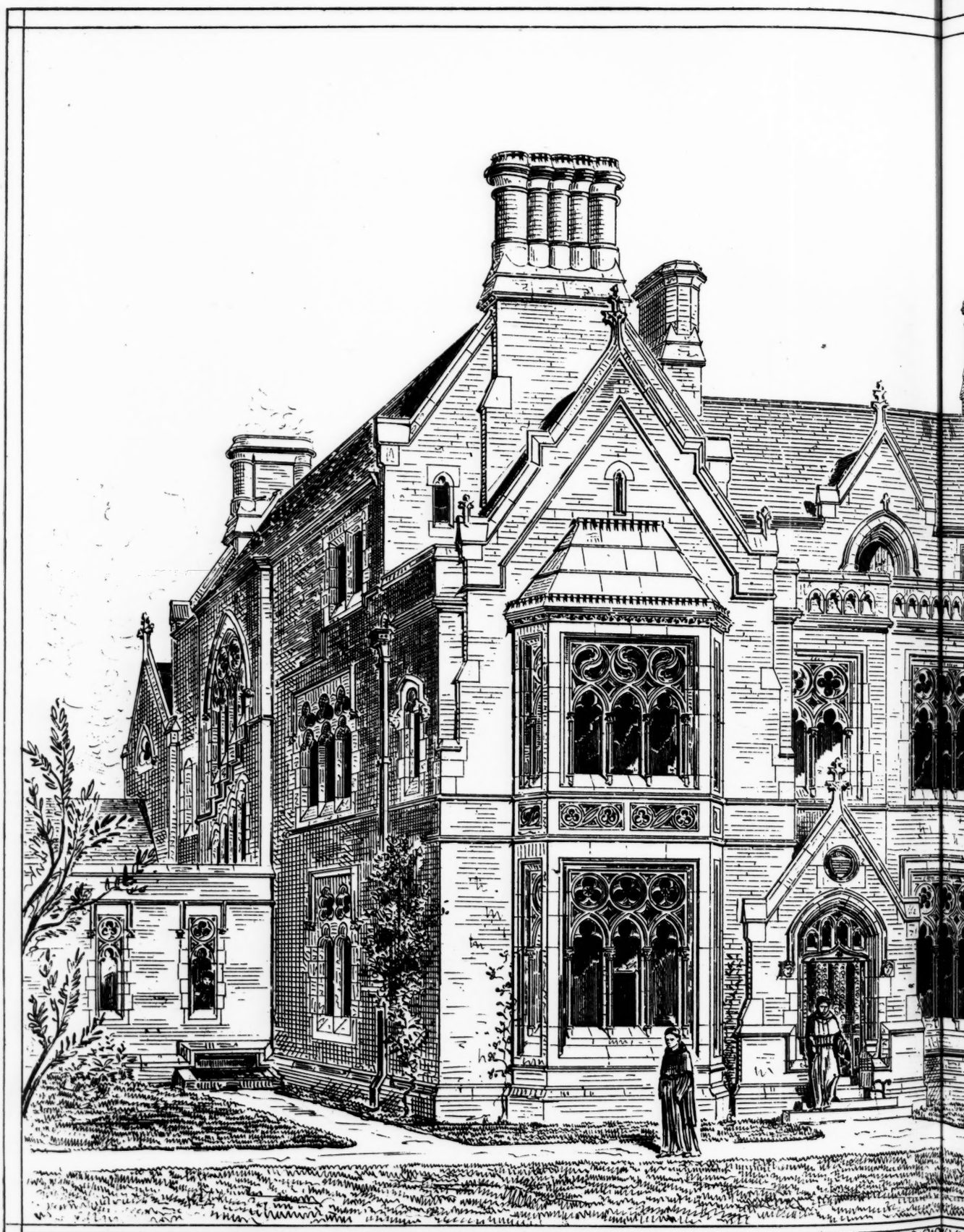
The fronts are of red Corsehill stone and red granite, the caps, fillings to tympanum, &c., being of bronze.

The granite work, architectural sculpture, and carving are being executed by Mr. Houghton, of Great Portland-street; the plumbing and sanitary work by Messrs. Beard, Dent, & Hellyer; the gas work and bells by Messrs. Freeman, of Swallow-street, Piccadilly; the pavement and other lights by Messrs. Hyatt; the ornamental iron-work by Messrs. G. B. Cooper, of Drury-lane; and the whole of the building works by Messrs. Bywaters, of King-street, Regent-street, under the superintendence and from the designs of Messrs. Archer & Green, architects, of 19, Buckingham-street, Adelphi.

Whiteman & Bass, *Photo-Litho* 236, High Holborn

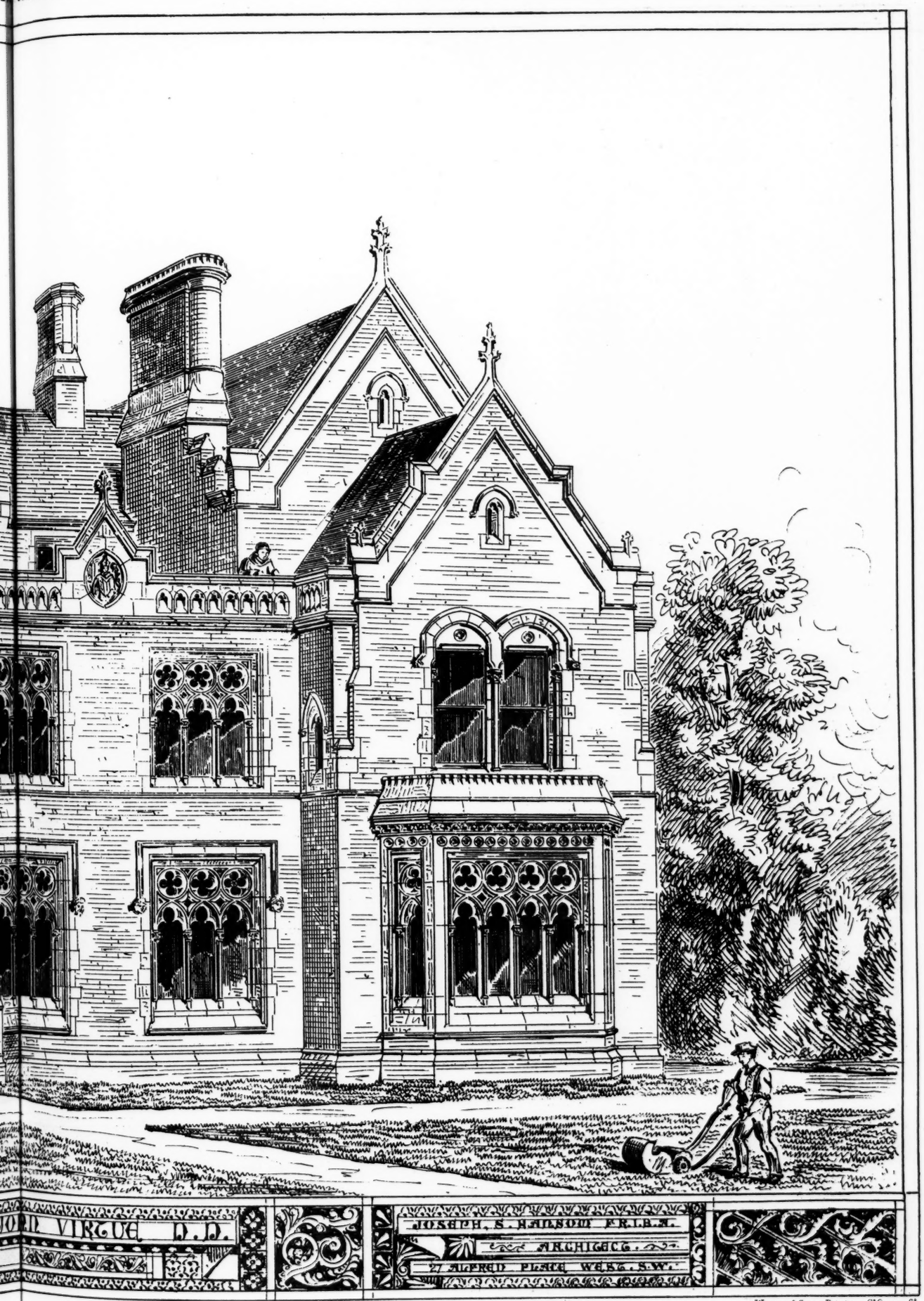
Wyman & Sons, Printers, Great Queen St.

LONDON STREET ARCHITECTURE: No. 193, FLEET STREET.—Messrs. Archer & Green, Architects.



EPISCOPAL RESIDENCE For The RIGHT REV.d LORD BISHOP OF PORTSMOUTH

Photo-Lithographed by James Akerman 6 Queen Square W.C



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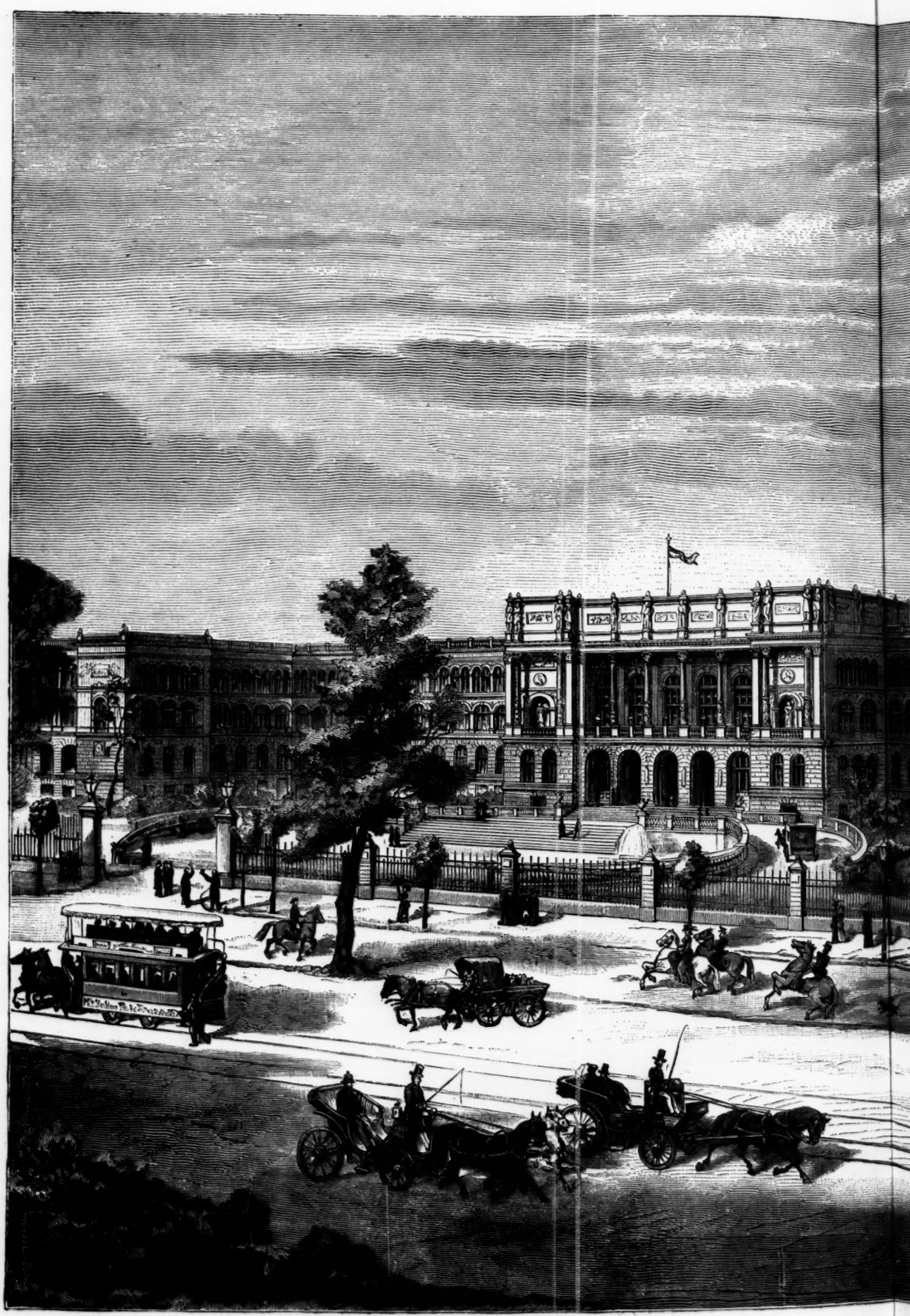
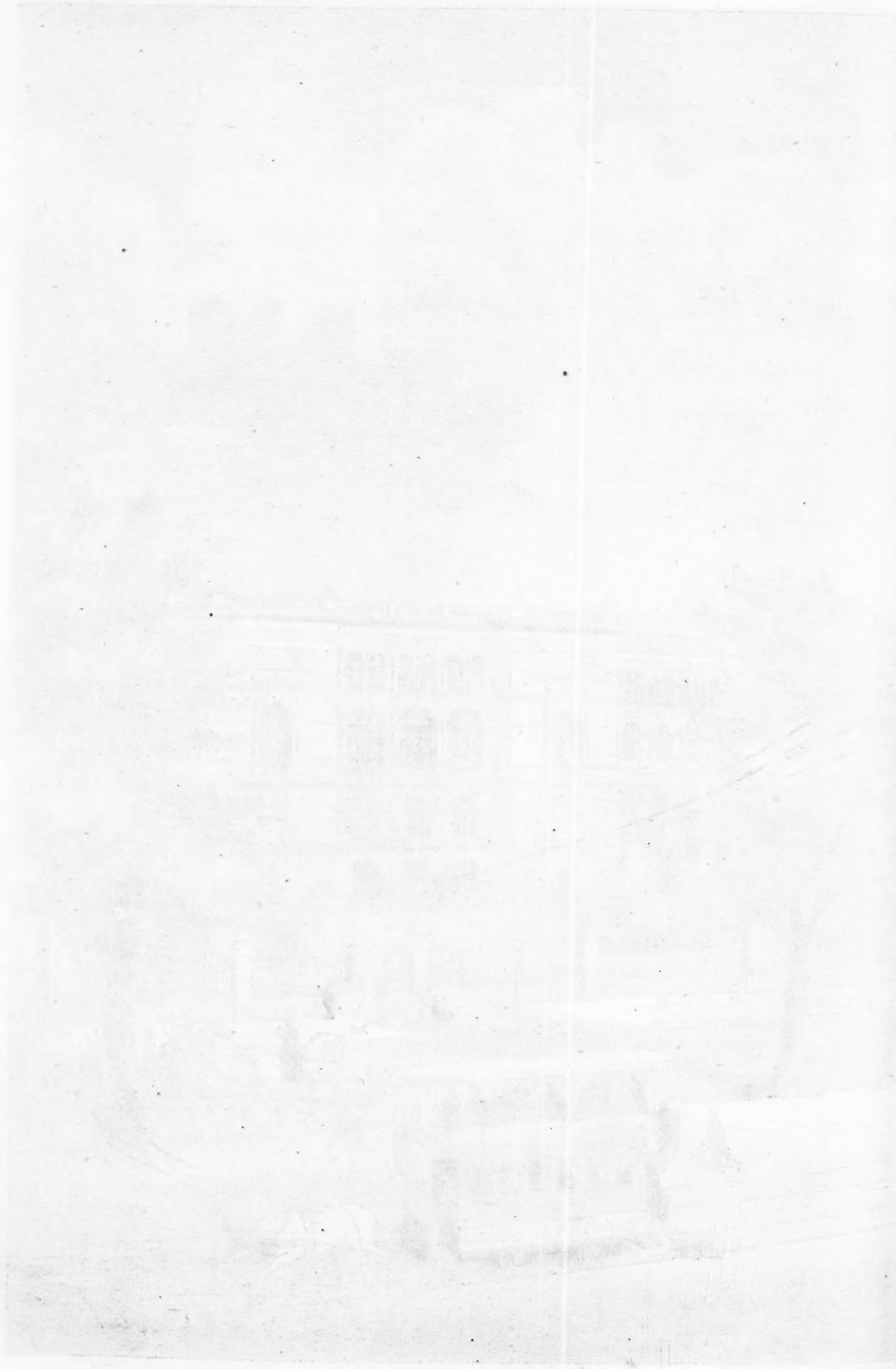


POLYTECHNIC HIGH-SCHOOL, CHARLOTTENBURG, NEAR BE

EAR BERLIN.—Professor Lucae and Baurath Hitzig, Architects.



NEW (R. C.) EPISCOPAL RESIDENCE, PORTSMOUTH.

THE Rev. Dr. Virtue was lately the Senior Roman Catholic Chaplain of the Army, and resigned his rank on being appointed to the new R. C. Bishopric of Portsmouth. Entering on his new duties, Dr. Virtue found himself with five bays of a fine church, from designs by the late Mr. J. Crawley (with two temporary ends) to form his cathedral.*

It would have been a great undertaking to complete the church in character with the part erected, and the Bishop further found himself without a house to live in, or accommodation for the priests who had to labour in the section of the cathedral. Efficient accommodation was therefore to be provided, and it had to be done in a substantial manner and characteristic style, for the Bishop wished to throw away no money on temporary work, but rather to hand down to his successors a building of which the new diocese should be proud. He consequently instructed Mr. Joseph Stanislaus Hansom, architect, of 27, Alfred-place West, South Kensington, who had added the late Mr. Crawley's business to his own, to prepare plans for a proper Episcopal House, with accommodation for six priests, and some spare rooms. An engraving in our present number shows a view of the building.

Besides the Bishop's private chapel, 16 ft. by 12 ft., reception-room, 30 ft. by 18 ft., sitting-room, 16 ft. by 12 ft. exclusive of a spacious bay, and bed-room, 16 ft. by 12 ft., the house contains sitting and bed rooms, communicating, but detached, for four priests, and single rooms for five priests or visitors, where recesses are provided for beds, otherwise cubicles. Beyond this, three bedrooms for servants are provided over the kitchen quarters, and separated from the main buildings.

The general household accommodation comprises library, 29 ft. by 16 ft.; common hall, 26 ft. by 16 ft.; and dining-room, 24 ft. by 16 ft. Beyond these there are two reception-rooms for visitors, business rooms for the vicar-general (16 ft. by 12 ft.) and secretary (18 ft. by 11 ft.), who has also a fireproof room, 11 ft. by 7 ft., adjoining, for the deposit of muniments and archives.

The kitchen quarters are perhaps somewhat small for such an important edifice, but they are conveniently arranged, so that the servants can at the least notice cross the corridor (72 ft. long by 8 ft. wide) to the entrance without interfering with the other inmates of the house.

All the rooms are to be fitted with Sheringham's inlet and Boyle's outlet mica flap ventilators. None of the drains are admitted under the house, but where obliged to pass under future erections well-ventilated subways are provided.

Electric bells are to be fitted throughout, and speaking-tubes arranged from the bishop's apartments to the vicar-general's and secretary's rooms.

The more important rooms are to be fitted with Abbotsford grates, and the others with Barnard, Bishop, & Barnard's slow-combustion grates. The chimneypieces are to be panelled in style with the house, in Corsham Down stone. There are bath-rooms on both the chamber-floors, and a linen-room on the upper one.

The stairs and corridors on all the floors are fireproof in construction. The sashes are to be of teak, and glazed with plate glass. The exposed woodwork generally is of pitch-pine varnished.

Externally, the walls, which are built hollow with a 3-in. cavity bonded with Jennings's bricks, are to be faced with dark Fareham red bricks, and the dressings are of Ham Hill stone, which is being supplied by Messrs. Staple & Hann. The roof is to be covered with brindled Broseley tiles, and the castings are Macfarlane's, treated with Professor Barff's process to prevent rust.

Over the front of the building in the front of our view is an asphalted concrete flat, 30 ft. by 19 ft., which overlooks the People's Park, and provides recreation space, which the present very restricted amount of land does not give opportunity for. Over the entrance-porch are the arms of Bishop Virtue (argent three bars vert), and in the gablet in front of the flat is a bust in alto relievo of St. Edmund, Archbishop of Canterbury, known as of Pontigny, where he was banished and died in the reign of Henry III.

The contractor is Mr. John Crook, of Southampton, the amount of the contract being 7,187*l*. Mr. E. H. Harrison is the clerk of works.

* Exterior and interior views of the church, as designed by Mr. Crawley, will be found in the *Builder* volume for 1879 (xxxvii., pp. 10-2-53).

THE SANITARY EXHIBITION AT KNIGHTSBRIDGE.

UNDER the auspices of the National Health Society an interesting and useful exhibition of hygienic dress and sanitary appliances has been arranged in Humphreys's Hall, Knightsbridge, opposite the cavalry barracks. The exhibition, which was opened on Saturday last by the Right Hon. the Lord Mayor and the Lady Mayoress, is intended, as far as possible within necessary limits of time and space, to illustrate the aims and objects of the National Health Society, which encourages and supports all practical efforts for carrying out the laws of health in daily life; and the collection, while exemplifying the many directions in which such efforts may still be usefully made, affords an instructive epitome of progress achieved. The results thus epitomised are some recompense for the labours of veteran sanitarians, but they will, it is to be hoped, stimulate many visitors to the exhibition to take a real interest in and to acquire a fair knowledge of the laws of health, not only for their own personal advantage, but for the sake of being able to intelligently co-operate with the National Health Society, the Parkes Museum of Hygiene, and other kindred institutions, in spreading a knowledge of hygienic laws amongst the masses of the people. And this, after all, as we have year after year pointed out, is a work the success of which will be to the advantage of every individual member of the community.

The exhibition is divided into seven classes, viz., Class I., Clothing; Class II., Food Products; Class III., The Sanitation of the House and Hygienic Decoration; Class IV., Appliances for the Sick Room, Home Nursing, and Home Education; Class V., Industrial Dwellings and Cottage Hygiene; Class VI., Heating, Lighting, and Cooking Apparatus, Fuel, and Appliances; and Class VII., Inventions by amateurs relating to any of the preceding classes of exhibits.

In *Class I., Clothing*, there is much to interest visitors in the way of "rational dress," including the "divided skirt," "hygienic boneless corsets," and "hygienic boots and shoes." We will not on this occasion attempt to describe these and kindred articles. We may, however, mention that among the articles of this class upon which male visitors to the exhibition are permitted to gaze, there is nothing ridiculous, and nothing very importantly suggestive. The "rational dress" movement, it has been cynically suggested, is likely sooner or later to develop into irrationality, but so long as its promoters refuse to be led by the caprices of fashion they seem to be tolerably safe from this pitfall, judging from the specimens of "rational" dress which are on view in the body of the hall. We make this reservation because we are unaware, by observation, of the contents of the "Ladies' Gallery," in which the greater number of the exhibits in Class I. are placed, and from which male visitors are jealously excluded. Stand No. 18, that of Messrs. Hamilton & Co. (in the body of the hall), contains, besides the "Harberton" dress, a number of useful and serviceable costumes, and some picturesque Albanian, Greek, and Eastern dresses. This stand has been decorated by Messrs. Liberty & Co., of Regent-street. The exhibition does not appear to contain many suggestions for "rational dress" for gentlemen, although there is certainly room for improvement in that branch of the subject.

Class II., Food Products, is well represented in the exhibition, but to describe the exhibits coming under this head, or even to give a detailed list of them, would take us somewhat beyond our province.

Class III., House Sanitation and Hygienic Decoration, contains a great many exhibits which come more immediately within our scope, but most of them are old acquaintances. Not that this is said by way of disparagement, for many of the appliances to which we are referring, and some of which we briefly mention hereafter, have stood their ground with buyers and users and crop up at successive exhibitions largely by virtue of their intrinsic merit. At Stand 34, Mr. Robert Adams, of Great Dover-street, exhibits his patent apparatus for opening fan-lights, &c., as well as his patent "Anti-Accident" reversible and sliding window-sashes. Messrs. C. Hindley & Sons (Stand 48), of Oxford-street, exhibit a room tastefully decorated and furnished by them, and exhibiting the use of non-arsenical paperhangings and Japanese leather-papers; the latter, being washable, constitute a wall-covering which is meritorious on sanitary as well as artistic grounds. At Stand No. 50, Messrs. Robert Boyle & Son, of Holborn-viaduct and Glasgow, exhibit their well-known ventilating appliances, which appear to be in increasing demand. Another ventilating appliance is the "ventilating ridge tile," exhibited by Messrs. Harcourt Thompson & Co., of Manchester, at Stand 54. The inventors propose to ventilate the various rooms in a house by carrying off the foul air through flues going up in the thickness of the walls and discharging through the ridge. At Stand 55, Messrs. Scott, Cuthbertson, & Co., of Chelsea, have an attractive display of paper-hangings, which are stated to be all hand-printed and non-arsenical. They are generally of good design. The Antiseptic Apparatus Manufacturing Company (Stand 44), of Queen Victoria-street, show their antiseptic water-waste preventers and flushing-tanks. At the next stand (45), Mr. O. D. Ward, of Upper Thames-street, shows Bean's improved water-waste-preventer and a useful hopper-closet of improved form. At Stand 56, Mr. G. Jennings, of Stangate, shows some of his well-known specialities in water-closets, lavatories, and urinals. The tip-up and lift-out lavatory basins, the patent "folding" lavatory, some concealed urinals, and a housemaid's slop-sink, are all worth the attention of visitors. At Stand 73, Messrs. Hayward Tyler & Co., of Upper Whitecross-street, exhibit their excellent full-flush valveless-closet, with improved siphon flushing-cistern. They also show a good selection of bath and lavatory fittings, and plumbers' brass-work generally. Mr. D. T. Bostel, of Brighton (Stand 74), shows his Brighton "Excelsior" wash-out closet, both in its original shape and in a modified form; also a night commode. At Stands 75, 76, Mr. Henry Conolly, of Hampstead-road, makes a good display of valve and other water-closets, together with some excellent lavatories and a variety of baths and bath-fittings. At Stand 57, the Sanitas Company, Limited, show their effective and not disagreeable disinfecting powders, fluids, and soaps. Another very good disinfectant is that shown in various forms by Jeyes's Sanitary Compounds Company, at Stand 58. Stand 59 is occupied by Moule's Patent Earth-closet Company, with their excellent appliances,—invaluable in many situations. Messrs. John Bolding & Sons (Stand 60), of South Molton-street, show some of their excellent water-closets, besides McGill's patent urinal, and a variety of baths, lavatories, and fittings. At Stand 63, the National Health Society displays its many useful publications, which every visitor will do well to look at. For a few pence a number of useful leaflets or tracts, containing practical rules and hints on such subjects as "How to keep Fever out of Houses," "How to keep Scarlet Fever from Spreading," &c., may be purchased. Such publications as these cannot be too widely disseminated. At Stand 64, Mr. P. A. Maignen exhibits his "Filtre Rapide." At the next stand (65) the Albissima Paint Company show their excellent products in a variety of forms. These paints are non-poisonous, and possess great covering power. This company's ready-mixed paints, done up in small or large tins, and fit for immediate use without the addition of thinnings or driers, are cheap, and likely to be much appreciated wherever they are used. At Stand 66, the Spongy Iron Filter Company, of New Oxford-street, are exhibitors of their speciality. Messrs. F. Crace Calvert & Co., of Manchester (Stand 67), are exhibitors of carbolic acid in its various applications to medicinal, surgical, disinfecting, and other purposes. Messrs. Houghton & Co., of Chelsea (Stand 68), are exhibitors of their registered "fat interceptor" for scullery sinks. These fat-traps are made in three sizes, in stoneware, and are easily cleansed. The same exhibitors' trap, with interceptor for solids, designed for stables, yards, &c., and their improved gully for sink and bath wastes, possess some good points. At Stand 69, Messrs. C.

Kite & Co., of Chalton-street, Euston-road, exhibit their inlet and outlet ventilators, and a model showing their action. We spoke favourably of them in our notice of the Building Exhibition two months ago. Glass revolving circular and sliding ventilators are shown by Messrs. H. W. Cooper & Co., Limited (Stand 70), of Upper George-street, Edgware-road. Messrs. W. Woollams & Co., of High-street, Marylebone (Stand 71), are exhibitors of some well-designed non-arsenical wall and ceiling papers. They also exhibit a case containing the various non-poisonous colours which they use in the manufacture of their papers, and which are suitable for decorative work in distemper. Messrs. Woollams deserve special recognition. At Stand 72, the Æolus Water-spray Ventilating Company show various forms of the Æolus ventilator. Stand 77 is occupied by Messrs. J. Purnell & Son, of Page-street, Westminster, who exhibit water-waste preventers and water-closets. At Stand 104, the North British Plumbing Company, of Upper Baker-street, show their improved system of house drainage by means of cast-iron pipes and connexions, as devised by Mr. W. D. Scott-Moncrieff, C.E. At this stand are also shown the "Moncrieff" bath-fittings, as introduced by Messrs. Ewart & Son, of Euston-road. Messrs. Jeffrey & Co., of Essex-road (Stand 105), display some very good non-arsenical wall-papers, hand and machine printed, frieze and dado decorations, embossed leather papers, lacquered gold papers, nursery papers, &c. At the next stand (106) Messrs. Howard & Sons, of Berners-street, show washable parquet flooring and wall-decorations. The Patent Victoria Stone Company (Stand 107) exhibit samples of their useful material as used for pavements, sinks, and other purposes. Messrs. Edgar Aldous & Son (Stand 108) exhibit their patent exhaust ventilators and their patent "ventiduct," for bringing in fresh air without dust. At Stand 109, Mr. Thomas P. Cook, of Hatton-garden, shows a combination cinder-bin and sifter. Mr. A. F. Angell (Stand 116), of Fulham-road, exhibits his air-tight covers for air-chambers and inspection pipes, &c., to drains, which have been illustrated in our advertisement columns. At Stand 117, Messrs. Morris & Co., of Oxford-street, have a very attractive display of wall papers printed with colours free from arsenic. One of these papers is of very rich design, the pattern being to a large scale. This paper (which, like everything else shown at this stall, is from the designs of Mr. William Morris) was specially designed for the grand staircase of St. James's Palace, recently decorated by the firm,—not in all respects very successfully, as it seems to us. The "Hammersmith" rugs and carpets, hand-made, are the fruits of an attempt which Mr. Morris set on foot three or four years ago, to make England independent of the East for the supply of hand-made carpets which may claim to be considered works of art. They are made, as we understand, in Mr. Morris's residence at Hammersmith, in order that he may the more effectually superintend the work. There are many other exhibits at this stand to interest the visitor.

Class IV., Appliances for the Sick Room, Home Nursing, Home Education, &c.—This is a very interesting and important section of the exhibition, but we need not stay to notice many of the multifarious appliances which it embraces. At Stand 19A, the North of England School Furnishing Company, of Darlington and Newcastle, exhibit Glendinning's patent adjustable "modern" desk, with Dr. Roth's seat. The desk and seat have much to recommend them, and are specially designed to prevent curvature of the spine and other deformities which too often accrue to young people through the use of badly-arranged desks and seats. Messrs. James Allen & Son, of Marylebone-lane, show at Stand 113 some portable Turkish hot-air and vapour bath apparatus. At Stand No. 2 in the small gallery devoted to the loan and amateur collections, we noticed a model of a bed-pan cage for storing utensils until visit of medical man. This cage is used at University College Hospital, and is fixed in the outer wall of the hospital, with three sides made of perforated metal open to the outer air, a solid door opening on the lobby of a water-closet or some other suitable position. At Stand No. 6 in this gallery the lady-superintendent of that excellent institution the Victoria Hospital for Children, Queen's-road, Chelsea, exhibits a cot with the model of a poor little patient ready to undergo tracheotomy. The screen used here is light and simple, the woven fabric being very quickly removed from the framework for cleansing. At Stand No. 9 (still in the small gallery) a model of the "Mayfair Dust-cellar" is shown by Mrs. Priestly; it contains two pails or receptacles for kitchen refuse, one of which is taken away full and returned empty every day.

Class V.—Industrial Dwellings and Cottage Hygiene.—We did not find many exhibits classed under this head, but, of course, many appliances suitable for industrial dwellings and the promotion of cottage hygiene are included in Classes III., IV., and VI. At Stand 43, Mr. C. Lumley, of Haymerle-road, Old Kent-road, shows a specimen of concrete fireproof floor. The only other exhibits under this head that we noticed were in the small gallery already referred to, where at Stand 1 Mrs. Buckton, of Ladbroke-square, and late of the Leeds School Board, exhibits a model of a back-to-back unsanitary dwelling, which is described as being an exact copy of a working man's house in Leeds (one of a block of twenty-four), built about fourteen years ago. This shows thirteen most glaring sanitary defects, which are mentioned in the catalogue and on a card affixed to the model. So much by way of bane. The antidote is supplied in the shape of a model of a sanitary dwelling,—one of a row of "through" houses, the sanitary arrangements of which are also tersely described in the catalogue and on the model. This dwelling is described as being constructed in accordance with the Leeds Building By-laws. It is noteworthy that the rent of this healthy dwelling is stated to be only 5s. 6d. per week as against 4s. 6d. for the unhealthy one. Among many other interesting items in Mrs. Buckton's loan collection is the syllabus of some simple lessons in the elements of sanitary science, as taught in some of the Leeds Board Schools.

In *Class VI., Heating, Lighting, and Cooking Apparatus* are well represented. Gas cooking and heating stoves are shown by Messrs. Beynon & Cox (Stand 78), of Torquay; Messrs. H. & C. Davis & Co., of Camberwell (Stand 82); the General Gas Heating and Lighting Apparatus Company (Stand 84); Messrs. B. Giles & Co., Blackheath (Stand 86), and some other exhibitors. At Stand 79, Dr. W. H. Stephenson, of Blackburn, exhibits his newly-invented portable gas-heated water-coils. Stand No. 80 is occupied by the Silber Light Company, of Whitecross-street, who show their patent gas-burners and patent oil stoves for cooking and heating purposes. At Stand 81, Messrs. Hayward Bros. & Eckstein, of Union-street, Borough, exhibit their semi-prism reflecting lens lights. These lights are not only admirably adapted for making basements available for many industrial occupations requiring daylight, but, by being used for basements where no work is carried on they may be made to serve an important sanitary purpose, for to throw light on dark corners is to prevent in many cases the accumulation of filth. The same exhibitors show some Sheringham inlet and Boyle's mica-flap outlet ventilators of improved construction. Stands 83 and 97 are occupied by the Coalbrookdale Company (Limited), who show, in conjunction with Mr. William Barton, of Boston, Lincolnshire, specimens of Richards & Barton's patent circular-fronted ranges, which possess many commendable points. A "Kyrle" grate; a patent "Save-all-waste" grate; Barton's patent "Premier" stove; the Milner nursery-grate, with wrought-iron boiler for heating bath-cistern; and Mr. W. Scott Morton's patent "Escoutille" grate, are among the other exhibits here shown. The last-named grate is, perhaps, the greatest novelty; it has coal-boxes or hoppers folding back into the sides of the grate, and is fitted into a patent expanding mantelpiece. At Stand 87 Messrs. Brown & Co., of Piccadilly, show their new lamps, with "Mitrailleuse" burners, for crystal oil. These burners give a very bright and smokeless flame. Stands 89 and 90 are held by Messrs. Brown & Green, of Finsbury-pavement and Luton, who show some smoke-consuming kitcheners and the "Kensington" register-grate. Their "Gem" and other cottage kitcheners are cheap, compact, and well-made. At Stand 91, Messrs. W. & S. Deards, of Harlow, exhibit the "Wonder" stove, likewise known as the "Princess Louise Coil Grate," for heating one's greenhouse from one's own fireside. Stand 92 is that of the Eagle Range Company, Fleet-street, who exhibit their convertible open-and-close-fire ranges. Stand 93 is occupied by Messrs. Underhill & Co., of Upper Thames-street, who exhibit their "Eureka" slow-combustion tile-grate. At Stand 94, Messrs. Potter & Sons, of Oxford-street, exhibit Mr. Saxon Snell's patent "Thermhydric" ventilating hot-water open fire-grate, which we have noticed on previous occasions. Mr. T. J. Constantine, of Fleet-street, shows his "Treasure" cooking-ranges and warming-stoves.

With regard to Class VII., we need only say that the exhibits by amateurs appear to be chiefly contributed to the Ladies' Gallery, to which we have before referred.

From the foregoing sketch it will be evident that the exhibition is well worthy of a visit. A varied and comprehensive programme of lectures is in course of delivery at the rate of two lectures per day.

THE ORIGIN AND DEVELOPMENT OF THE SCIENCE OF HYGIENE.

THIS was the subject of the inaugural lecture of the Parkes Museum of Hygiene, delivered on the 1st inst. by Dr. de Chaumont, F.R.S., Professor of Hygiene in the Army Medical School, Netley.

The lecturer commenced by observing that to trace the history of the search of the human race after health would be almost tantamount to writing the history of the race itself. An inquiry into early wanderings and gropings after health would be doubtfully useful, even if it were likely to be interesting, for it would bear to the hygiene of the present day something of the same relation that the visions of the astrologer bear to the astronomy of Newton. Perhaps some might object that this is claiming too much for our subject, and that even its title to be treated as a science may be questioned. But much the same objection might be made to Medicine, and perhaps even to other branches of knowledge which are conventionally included in the list of exact sciences. A careful examination, however, of the position which hygiene now holds will justify us in claiming that it has made such advances as may fairly entitle it to take its place among the progressive if not absolutely exact sciences. Its literature has been said with truth to be amongst the oldest in the world, the earliest records being religious ceremonial formulas which ever involved rules directed to maintain the health and efficiency of the people. It has been proposed to place upon these walls the names of the illustrious dead who were the pioneers and founders of our science, and the difficulty will probably lie more in the wealth than in the paucity of material, rendering selection less easy where so many are worthy. We cannot doubt that in order of chronology the first name to be honoured is that of Moses, as the author of the most complete and detailed system of hygiene in ancient times. His rules, given as part of the Divine Law, are, of course, mixed up with religious ceremonial, both as being appropriate to the age and to the nation for whom they were intended, and also as being more likely to be followed when made in that way a part of the religion of the people. But we may be pretty well sure that the code of Moses was the outcome of the wisdom and experience of long past ages. Some of the rules we may smile at nowadays, as being a superfluity of precaution, and it is true that with advance of knowledge we can see that certain of them were unnecessarily sweeping in character; but still it would not be too much to say that a fairly strict adherence to the Mosaic law would have preserved mankind from many of the disastrous plagues which have afflicted it. The history of the Jews themselves illustrates this point. Of old, when a pestilence visited them, it was always represented, and probably with perfect truth, as a punishment consequent upon the breaking of the law, a statement which may be frankly accepted either by those who maintain the special intervention of a Divine Providence, or by those who regard it as a strict consequence following on antecedent cause. In later times, and especially during the Middle Ages, the Jews enjoyed a remarkable immunity from outbreaks of epidemic disease, an immunity which still distinguishes them in our own time.

Let us turn now to the classic records, as they are called,—that is, the writings that remain to us from the Greeks and Romans. Considering how many men must have written in those times, how general knowledge and the art of writing were, we have to lament the

paucity of the literary remains that have survived. How we curse the fanatical zeal of Omar, who burned the library of Alexandria, and still more the senseless stupidity of the monks of later days, who scraped out the writing from priceless manuscripts to write missals and the like in their place! As might be expected, it is to the Father of Medicine, the great Hippocrates, that we owe the most of what we have left of Greek hygienic literature, although we must admit that even in Homer there are traces of hygienic knowledge, and that there the disinfecting powers of cleansing fires of sulphur are fully recognised. It is a remarkable fact that one of the chief books of Hippocrates relating to hygiene,—viz., that on "Air, Waters, and Places,"—is one of the few about the authorship of which no doubt has ever been raised. Like the code of Moses, it was probably a summary of the already existing knowledge of the subject, supplemented and extended by the experience of the great physician himself. Another name that deserves remembrance is that of Xenophon, whose triumphant retreat was no less a hygienic than a military triumph; and there is no doubt also that Alexander the Great was a master of the art of hygiene, to have taken his force so far with so little loss. Nor ought we to omit the name of Herodicus, one of the preceptors of Hippocrates, and the first to introduce gymnastics on scientific principles, not only as a curative, but also as a preventive measure. The works of Asclepiades, who boasted that he would never be sick, and did, indeed, die of a fall, and those of Aretæus, doubtless contained reference to preventive medicine, whilst those of Galen, which extended to 300 volumes, the majority of them now lost, furnished many of the precepts on which later hygiene was based. On the other hand, the myth which makes Health, or Hygeia, the daughter of Asklepios (whom we call Æsculapius) no doubt arose from an instinctive perception of the value of medical science in preserving health as well as in the cure of disease. The general life of the Greeks was eminently hygienic, being mostly out-door and under favourable conditions, persons even of high position taking part not only in active occupations, but in labours that might be even considered menial by the unthinking. The honourable place that athletic games held is a point of resemblance between the Greeks and our own countrymen that ought not to be lost sight of. Nothing is more conducive to health of body and mind than active exercise in the open air, and the splendour of Greek literature, art, and knowledge is a sufficient answer to those who are afraid lest athletics should develop the muscles of our youth to the detriment of their brains.

Among the Romans the care bestowed upon the provision of pure water,—with which is connected the celebrated name of Frontinus, as *Curator Aquarum*,—and their elaborate system of drainage, prove that they had correct ideas on some of the fundamental questions of hygiene. Their fondness for bathing and extensive establishments for that purpose remain monuments of the next-to-godliness which even at this distance of time we, with all our boasted civilisation, have been unable to emulate. The more recent discoveries in the Campagna have still further shown that they were fully aware of the conditions which alone could make that now pestilential region habitable, as a system of subsoil-drainage has been revealed that is a reproach to the ignorance and supineness of modern times. Nor was Rome the only city of antiquity that was efficiently drained, for we have evidence of it at Agrigentum at least; but Rome was certainly among the oldest of which we have actual remains, the beginnings of its great cloaca going back at least twenty-five centuries. Another direction in which the Romans showed great knowledge of the principles of hygiene was in the management of their troops on the march and during war.

In taking a cursory retrospect of the Old World in its medical aspects, the lecturer was inclined to say that on the whole its Medicine was as much preventive as curative. It is probable that such a proposition would be combated; but, in spite of the treatises that have survived in curative medicine and surgery, and the long list of medicaments that we find, for instance, in the works of Galen, there was probably as much, if not more, done in the preventive line as in the simply curative. The motto of the time might have been, *Venienti occurrite morbo*. Two things seem to indicate this:—1. There was a dread and impatience of disease, so much so that men were known to commit suicide to escape it, like the aged Indian who slew himself at the tomb of Achilles for fear he should die of disease, from which he had through life been free. 2. The sentiment of pity for the weak and the oppressed appears to have been absent; there was the same tendency as we find among animals and among savages to hold a sick man of little account, as useless to the state, and the sooner got rid of the better. Hence, perhaps, the curious fact that we have no record whatsoever of public hospitals or infirmaries for the sick poor during the Classical period,—the earliest being as late as the reign of Justinian.

From the time of the decline and fall of the Western Empire the progress of hygiene appears to have been arrested. Some few of the treatises of the Greek and Latin physicians survived; others were known only as translated from the Arabic, &c.; whilst the wholesome traditions of the hygienic life of Greece and Rome appear to have decayed, and we pass into a dark and dirty period when fanaticism usurped the place of religion, and dirt became the odour of sanctity. The Hermits of the Thebaïd became the types of all that was holy, and so framed their lives and manners as to be as much as possible the antithesis of the heathen. The heathen led an active and healthy life, the Christian fanatic led a life of mooning and inaction; the heathen washed himself and his clothing, the Christian foreswore cold water and wore his clothing till it fell off his body from sheer rottenness. The picture of the thousand years which elapsed between the downfall of Rome and the final capture of Constantinople, as drawn by Michelet in his "Sorcière," is one of the most striking as well as disgusting that can be conceived. "Pas de bain," he says, "pendant mille ans!" Can we wonder at the plagues which devastated Europe? Is it astonishing that the "black death" cut off two-thirds of its inhabitants? Although the revival of learning was partly instrumental in arousing up the nations to a sense of their degraded condition, yet the change was by no means great, even down to much later days, and it is humiliating to think, from the accounts of Erasmus and other visitors to our shores, that our own country remained long pre-eminent in Europe for dirt and disease. Hardly a decade passed without visitations of some foul malady until the cleansing fires of the great conflagration of London in 1666 appear to have extinguished the last vestiges of those old and dreaded enemies. It is true that even then we were far from being free from epidemic disease, and that we are still open to its ravages; but the forms of disease which have shown themselves since the Great Plague are of a type, if not entirely different, still of a kind and under circumstances which have been more understood, and the causes traced more certainly to particular conditions. But one can easily imagine how different the case of Europe might have been could the hygienic knowledge collected during and before the Classic period have been carefully put together, formulated, and acted upon by the succeeding generations. As it is, whatever may have been written in the Middle Ages, was either a mere re-echo of the classic writings, a copying of the Arabian physicians, or a farrago of nonsense into which spells and magic largely entered. . . . . .

It is a little difficult in a necessarily restricted lecture to convey any exact idea of the way in which modern hygiene became formulated into so much of a science as it can at present lay claim to; but a brief sketch might be made of its more salient points. In the eighteenth century there were several important questions inquired into, and to a large extent solved, of which the chief were: (1) The influence of air as a factor in the spread of disease; (2) the true cause and prevention of scurvy; and (3) the prophylaxis of small-pox.

The recognition of foul air as a factor in disease was certainly begun in the last century, when the brilliant discoveries in pneumatic chemistry made by Lavoisier, Cavendish, Priestley, Black, and Rutherford threw such a flood of light upon a previously obscure subject, and opened the whole immense vista of the boundless science of modern chemistry. It was only then that the physiology of respiration could be even partially understood, and the changes recognised which take place in the respired air from the lungs of man. The great disaster of the "black hole" of Calcutta, and the terrible effects of the gaol fever, investigated by Howard and others, pointed to foul air as a main factor in the propagation of disease and death; and this was further corroborated by the observations made by military surgeons that outbreaks of typhus (or putrid fever) were most rapidly arrested when troops were encamped and scattered widely over the surface of the ground. It was reserved for the later researches of Neill Arnott and other hygienic observers of the present century to prove the still more important fact that foul air is the main cause of the still more general and fatal class of destructive lung diseases, which in this and in other lands cut off so many of the brightest and the best.

Another important discovery of the last century was the determination of the cause of the well-known lead colic by Sir George Baker. This opened up the large field of metallic poisoning which has received so much elucidation and proved of such importance in reference to the water-supply of large communities.

In the present century we have to point to the establishment of the fact of the water-carriage of disease, with which the name of Snow is so honourably associated; the differentiation of continued fevers by Stewart and Jenner, and their connexion with the poison of infected excreta by the labours of Budd and other eminent men. To these we must add the elaborate investigations into the modes of propagation of cholera, dysentery, and other tropical diseases, and the means by which scarlet fever, diphtheria, &c., are carried from place to place by various channels of communication. It would be unadvisable, even if it were possible, to enter into details on these points; but there is one branch of the subject on which we must dwell for a little. No inquiry can assume a scientific form unless it has a numerical basis to work upon, and therefore it behoves us to note the starting-point of such a basis in hygiene, if we can find it. This we do find in the collection of statistics, a beginning of which was made a long time ago in the bills of mortality kept in this country. We know how imperfect those were, and how even the population of this country was not correctly known until within the lifetime of men still living. But, still, beginnings were made, and the question taken up more and more enthusiastically by enlightened men, until at last the Government Statistical Department was formed, and that remarkable series of reports begun which will immortalise the name of William Farr. From that time the future of hygiene was assured; for there was sound ground to work on, and if we add to that the valuable roports on the health of towns published by the Commission, of which the present Duke of Buccleuch was president, we shall have stated some of the most important foundations of modern sanitary science. Those reports disclosed a state of things little dreamed of, and statistical returns compiled by Dr. Farr showed how much the life and health of the nation were dependent upon the conditions in which its individual members were placed. The establishment of the General Board of Health, under Mr. Chadwick, was one of the valuable outcomes of this remarkable movement. Although the original Board of Health was brought to an end in 1854, yet its work has been continued and expanded under Mr. Simon, his colleagues and successors, in spite of many difficulties and obstacles.

The part which the public services, such as the Army and Navy, played in the progress of hygiene, was very important, as might indeed be expected; for, under no other circumstances could bodies of men be so well observed, and the effects of surroundings and conditions upon health noted. Perhaps the most remarkable contribution the Army has made to sanitation has been by the evidence given to the Royal Commission of 1857, which met after the Crimean war to investigate the causes of the sickness and mortality of our troops. The results of that Commission are well known, and from its publication may be dated the reforms which have been productive of much advantage both to our own and foreign armies, and to the civil population as well. The paramount influence of foul air in the production of lung disease was proved to demonstration, and the art of ventilation was placed upon a secure foundation. The Barrack Hospital Committee, of which Dr. Sutherland and Captain Douglas

Galton were the active members, laid down a series of regulations for the construction of barracks and hospitals, which have been followed with the utmost benefit both at home and abroad. Following this came the Indian Commission, which did for that vast dependency what the Home Commission had done for the rest of the empire. The mortality in India was found to be inordinate, and it was equally clearly traced to insanitary habits and surroundings. To recognise an evil and its cause is half way to curing it, and after a lapse of a quarter of a century we can point, not certainly to perfection, but to such an improvement as might fairly at one time have been looked upon as chimerical. The death-rate of the army at home is only two-fifths of what it was before the Crimean war; the death-rate in India is only one-third, and the death-rate in the West Indies one-tenth. In civil life it has recently been shown that the improvements of later times have resulted in a diminution of 2 per 1,000 in the general death-rate, and with the knowledge we now have of the causes of disease we may be sure that a general death-rate of not more than 15 per 1,000 may be confidently looked for. We have not yet got rid of the fatal endemics in our midst, but they are in some directions diminishing, and we have good hope for the future; whilst it seems probable that neither cholera nor any other introduced pestilence could establish a foothold in our land. The remarkable immunity of soldiers and prisoners in the last epidemic shows what can be done when people can be compelled to lead fairly hygienic lives.

In conclusion, Professor de Chaumont paid the following tribute to the memory of Parkes:—Edmund Alexander Parkes did more than any other man in this or any age to make hygiene a positive fact, a practical science, based upon not only philosophical conceptions, but actual experiment. Starting in life as an army medical officer, he was able to produce during his short service in India and Burmah works upon dysentery and cholera, which will always be of the greatest value. Retiring into civil life, he became eminent as a physician and teacher, and in 1855 he undertook the organisation of the hospital at Renkisi, in the Dardanelles, which was a perfect model of successful hygienic administration. Struggling with distressing and dangerous disease, he continued to lead a life of intellectual activity not often accomplished by the most robust; and when, in 1860, the Army Medical School was established by Lord Herbert of Lea, Sir James Clark had no hesitation in advising that Dr. Parkes should be secured if possible as the Professor of Hygiene. How excellent the foresight of that eminent physician was we all know, for Dr. Parkes was not only the first professor of the science in this country in point of time, but also the first in every sense of the word. The publication of his well-known "Manual of Practical Hygiene" gave us for the first time a work on the subject, which was not merely a string of opinions and surmises, but at every point brought opinion to the test of figure and experiment, where it was possible, and thus laid the foundation for a real science in the future. Similarly with his teaching, he pressed upon the Government to establish practical laboratories for his pupils, where they could do for themselves as much of the experimental work as time and opportunity allowed; and he impressed upon those who studied under him the necessity of testing everything by actual investigation, and bringing all statements to the proof of figures, before accepting them as true. There was never, probably, a man of calmer and more judicial mind, a man more rigidly critical of his own work, or more kindly disposed to allow every credit to the work of others. Having known him personally for many years, during thirteen of which I was his assistant and colleague. I can bear confident testimony to the exceeding beauty of his character, in which "sweetness and light" were ever most truly displayed, and to the scrupulous accuracy and care with which every investigation of his was carried out. The science of hygiene could have no purer and better founder, and its votaries no brighter and more spotless example.

The Hon. Dudley Fortescue moved a vote of thanks to Professor de Chaumont for his interesting lecture.

Mr. Robert Rawlinson, C.B., in seconding the motion, said that this question of hygiene, which had been taken up with increasing earnestness in modern times, was obviously one of the greatest and most important that could concern the human race. Unfortunately it was his sad experience to know that not only in our large and busy towns, but in many of our rural villages, there existed a state of overcrowding which made it absolutely impossible for tens of thousands of the population to grow up in the principles of virtue. What wonder, then, that we had a large population of unruly, improvident, and criminal persons? He had great hopes that the work of which the Parkes Museum was only one phase would bear fruitful results in improving the sanitary condition of the people. Statesmen were now beginning to see that it was their duty to do something to improve the dwellings of the poor. Improvement in the dwellings of the poor was really the foundation of all progress in their sanitary and social condition. Many restrictions now operated to prevent very rapid progress in the work of properly housing the people, and one of those restrictions was found in the present conditions of land tenure, under which land could not be enfranchised so as to afford room for housing our growing population.

The vote of thanks was carried, as was also one to the chairman (Surgeon-General Crawford, Director General of the Army Medical Department), moved by Sir Joseph Fayrer, and seconded by Dr. Steet.

THE BERLIN BOURSE.

THAT a couple of thousand active men of business cannot meet every day in the same hall without bringing into it a considerable quantity of dust is nothing surprising; nor is it wonderful to find that in the German capital, built as it is on a sandy plain, the dustiest building known is the Exchange, where merchants and their clerks are in the regular habit of assembling daily to transact their business. Of the atmosphere of the Berlin Bourse its frequenters have long complained, but it has only recently been known how well justified the murmurs were. Some time ago it was determined to clean the walls and pillars supporting the roof of the great hall, and it has just transpired that the quantity of dust and dirt removed during the cleansing process from the interior surfaces of the building not reckoning the floor, filled no fewer than twenty-eight cement barrels! And, of course, in the operation of cleaning not a little of the dust was scattered again, so that the twenty-eight barrels do not account for all. When it is remembered that all this quantity of dust had risen from the floor in fine particles and had then settled on the surface of the pillars, walls, and ceiling, we can gather some idea of the immense amount which, within a few years, has entered the respiratory organs of the gentlemen habitually resorting to the spot.

FOREIGN NOTES.

Berlin Furniture Competition.—The municipal authorities of Berlin have resolved to offer a series of prizes, the first of 1,000 marks, the second 600, and two third prizes of 300 marks each, for the best sets of furniture costing not more than 500 marks (or 25*l.*), suitable for furnishing a small dwelling for a working-class family. The competing articles are to be ready by the beginning of the coming year, and the whole of them will then be shown in a special exhibition at Berlin. The competitors are to undertake, if required, to supply sets similar to those exhibited, at the stipulated price, any time within twelve months from the date of the opening of the exhibition.

Berlin Hygienic Exhibition.—During the first two weeks since the opening of the Hygienic Exhibition at Berlin, the receipts for admission taken at the doors amounted to upwards of 4,000*l.* The pecuniary success of the enterprise has far surpassed the hopes of its promoters.

A Buddha Statue.—An ancient statue of Buddha, of excellent workmanship, was recently dug up in the course of some excavations at Meywar, in the Punjaub. It is of marble, and stands 6 ft. high. In artistic value it is not inferior to the best works which have been handed down from the Buddhist epoch. The nose is damaged and the legs broken, otherwise it is well preserved. The statue is now on its way to England, and will find a permanent resting-place in the British Museum.

Interesting Relic.—In the second half of the sixth century the then reigning Byzantine Emperor sent to Saint Redegonda, in France, a reputed relic of the Cross of Christ. It was set in a frame of gold work, executed by Byzantine masters, and was adorned with smalt work. For centuries this unique work of art was lost, but on the 1st of May this year it was discovered at Poitiers by M. Mouriquoze Barbier de Montant. It is artistically of great value, as the oldest-known specimen of Byzantine workmanship still extant.

An Electric Railway in Paris.—The well-known electrical engineers, Messrs. Siemens & Halske, have, according to *Les Mondes*, worked out a plan for an electric railway, nearly two miles in length, in Paris. It is proposed to build it on a high viaduct, running from the outer boulevard of La Vilette to the Place Clichy. The number of stations is to be nine, so that the average distance from one to the other would be rather less than a quarter of a mile. The passenger traffic would be carried on not by trains of carriages, but by single carriages running at intervals of two minutes. As the level of the line varies in different parts, it is proposed to divide it into sections according to the gradients, each receiving the current by a separate cable. This will enable the line to be worked much more economically, the highest power only being applied where it is wanted at the steepest sections. The safety of the line will also be increased by always having a clear section between each two carriages and shutting off the current from the interval.

A NEW HOSPITAL FOR BRISTOL.

IN a recent issue we gave a somewhat lengthy description of a vast building undertaking in Bristol,—namely, the erection of a gaol which, when completed, will be the finest in the kingdom, and will entail the expenditure of many thousand pounds; and now we have to record the commencement of another undertaking of nearly equal magnitude,—the building of a new hospital in Bristol for sick children. The building is to cost over 11,500*l.*, exclusive of the sum spent in a site,—2,500*l.*, so our readers will gather from the total that the work in hand is of considerable importance. The ceremony of laying the memorial-stone was performed last Friday, by her Grace the Duchess of Beaufort, and the assembly present was one of the most influential Bristol has seen for some time. At present there is a hospital for sick children, but it stands on ground which is held under an unrenewable lease from the Corporation of Bristol, to whom the property must revert in the course of a few years. It thus became imperative, in order to secure a permanent building, that land should be acquired which was practically freehold, and that a new building should be erected upon it. A most eligible site was obtained, namely, a plot of ground fronting St. Michael's Hill. It is open and airy, has a warm sunny aspect, and commands splendid views.

The hospital is to be built from the designs of Mr. Robert Curwen, architect, 103, Palace-chambers, Westminster, and while the new building will, architecturally considered, be worthy of the city, its internal planning will be in accordance with the most modern ideas of hospital arrangements and with the most approved principles of sanitary science. The style of architecture will be Late Perpendicular, and the hospital will be constructed on the pavilion system, affording light and air on three sides of the wards. The question of ventilation has been carefully studied, and the system known as Captain Norton's patent will be utilised. The drain-pipes are outside the building, and well ventilated, so that no odours can find their way into the hospital. The plans of the building include five wards, with ten beds in each, for children from two to twelve years of age; two rooms for isolating special cases that may require to be kept unusually quiet; one room with steam apparatus for treatment of croup; two wards with four beds in each for women; one ward in which babies requiring surgical operations may be received under care of their mothers; a play-room for convalescents, and suitable accommodation for matron, nurses, &c. In another part of the ground will be erected a small building containing three wards, with three beds in each, for infectious cases and cases of a contagious nature. Altogether there are seventy beds in the hospital. The five main wards will measure 30 ft. by 20 ft., the desire of the committee being to have them sufficiently

large to be thoroughly airy, and to enable the children to be treated under the most favourable conditions, which cannot be the case in small wards. The aim of the committee has been to make the new hospital "a model institution," and when it is completed it will be, for its size, as complete an institution as could be found anywhere. The building of the main corridor, the three blocks of wards on the south side, offices, &c., is being rapidly proceeded with.

THE BRICKLAYERS' NEW CLUB-HOUSE BUILDINGS.

THE Society of Operative Bricklayers have just erected and opened a new hall and offices in Southwark Bridge-road, upon a site purchased by the society as their freehold, at an outlay of 2,204*l*. The building, which covers an area of 2,800 superficial feet, has a frontage to Southwark Bridge-road of 30 ft. in width, and is carried to a depth of about 80 ft. The architects of the building are Messrs. A. & C. Harston, of Leadenhall-street, and the structure has been erected by members of the Bricklayers' Society, under the superintendence of Mr. F. Hammond, one of its officers. The building is carried to a height of between 55 ft. and 60 ft., and contains three lofty floors. The elevation is faced with red gauged brick from the Brackley works, in Berkshire, the base being in blue Staffordshire brick. It has a handsome frontage, and it is claimed for it that as regards material and workmanship there is no finer specimen of brickwork in London. The entrance to the building is surmounted by a deeply-recessed arch, elaborately decorated with brick cut down in pieces of less than an inch in facing. Over the entrance, in moulded brickwork, are the bricklayers' arms. The ground-floor has two arched windows, immediately above which, on the first floor, is a three-light bay-window. Above the main cornice is a recessed pediment.

Internally the building contains, in the basement, an apartment extending the entire depth of the structure, and capable of holding 600 persons. The principal apartment in the building is the hall on the ground-floor, which is 76 ft. long and 30 ft. wide. The walls of the hall are faced with red, white, and yellow gauged brick, and the apartment is tastefully fitted up, the ceiling being of polished pitch pine. On the first floor are large and commodious committee-rooms, together with the general secretary and clerk's offices and strong rooms; and the upper floor contains the residence of the secretary. From this floor a flight of stairs leads up to an open flat roof at the top of the building, from which there is a commanding view of the neighbourhood around. The total cost of the building, in addition to the cost of the land, has been 4,500*l*.

The operative bricklayers have done a good work in thus providing themselves with commodious apartments and meeting-place. We shall hope to find them setting an example to other more wealthy bodies one of these days by introducing a good piece or two of art, even at the cost of "a smoke" or two a week.

THE STATISTICS OF TELEPHONES.

WITHIN the few years that have elapsed since the telephone was invented and rendered available for practical life, 161 towns and cities in Europe have been provided with telephone systems, and the total number of subscribers to them is 30,066. In Asia there are four cities with 420 subscribers; in Africa, four cities, with 240 subscribers; in America, 126 cities, with 47,185 subscribers; and in Australia, five cities with 897 subscribers. The grand total of cities with telephone installations is therefore 303, and the total number of subscribers 78,808. The 161 cities of Europe are divided among the various countries as follow:—75 in Great Britain, with 7,287 subscribers; 13 in Italy, with 5,507 subscribers; 18 in France, with 4,437 subscribers; 21 in Germany, with 3,613 subscribers; 6 in Belgium, with 1,941 subscribers; 5 in Sweden, with 1,554 subscribers; 6 in Russia, with 1,351 subscribers; 4 in the Netherlands, with 1,340 subscribers, and in the other European countries as follow:—in Austria, Hungary, three cities, with 870 subscribers; in Switzerland, two and 825; in Norway, two and 745; in Portugal, two and 80; and in Spain, three cities, subscribers unascertained. The only countries in Asia with telephones are India with five cities and China with two (Hongkong and Shangai).

THE METAL WORKERS' EXHIBITION AT BERLIN.

THIS Exhibition is the fourth of its kind, and affords an opportunity of comparing the present development of the industry in question with its condition four years ago, when the last exhibition was held at Nuremberg. On that occasion, as might have been expected, the metal-workers of South Germany were specially represented, and consequently the selection of Berlin for the present display has given general satisfaction, from the opportunity thus afforded to the artificers of North Germany to show, in a prominent manner, the position they have attained, although in each case the exhibition was a general one for the whole of Germany.

The opening took place on May 10th, and the close has been fixed for June 9th. The following are the sections into which the exhibition has been divided:—

1. Metals in the unwrought state, &c.
2. Metal work for the exterior of buildings.
3. Metal work for the interior of buildings, including pipes, sanitary appliances, &c.
4. Domestic and culinary utensils of metal.
5. Ornamental metal work, &c.
6. Lacquered goods and toys.
7. Illuminating appliances for gas and candle light.
8. Chemical materials used in metal working and technical literature.
9. Machinery and tools used in metal working.
10. Ancient metal work typical of the historical development of the industry.

In groups 2 and 3, which are of special interest to the building trade, there has been, amongst other items, a good display of zinc ornaments. One firm has exhibited a model of a roof, one-third of the natural size, which has been favourably noticed. A metal group, representing two panthers embracing an obelisk, is also commended in the technical press. It stands on a pedestal 39 in. wide, 47 in. high, and 16 ft. 6 in. long. A new system of roofing with metal slabs is exhibited by the inventor, H. Klehe, of Baden-Baden.

RAPID RAILWAY BUILDING.

THE rapidity with which the construction of the Canadian and Pacific line is advancing excites no little astonishment on both sides of the Atlantic. Within five months no less than five hundred miles of permanent way were completed, being at the rate of more than three miles a day. This high rate of speed in the despatch of the work is due to a very practical division of labour, and the unusual familiarity of all sections of the workmen with the best methods of executing their task. The number of men employed was only 159, assisted by fifty-five two-horse carts and drivers. In the month of August last ninety-three miles of line were finished, and on one day alone as much as four and a half miles of rails were laid down. In regard to solidity of execution the railway cannot, of course, compare with English lines, and will not admit of trains travelling at very high rates of velocity, but the line is quite equal to what will be demanded of it in the wild and lonely regions through which it passes.

NEW SYSTEM OF LIGHTNING CONDUCTORS.

MELSEN'S system, as described in the *Zeitung für Blechindustrie*, is designed upon a different system to that hitherto in use. The present method, invented by Gay Lussac, consists of a metal rod at the top of a building from which rods are brought down to the earth. Melsen, on the contrary, proposes to surround buildings with a network of metal wire, which communicates with the earth (preferably with springs or ponds), and has in its upper portion a number of metal points. The old system was founded on the theory that the higher the lightning conductor was placed, the more extensive was the circle it protected, the diameter of which was estimated at four times the height of the rod. There are no scientific facts to prove the correctness of this theory, which experience has shown to be faulty. On the other hand, laboratory experiments have confirmed Melsen's principle that the numerous points divide the electric spark, and thus modify one violent shock into a number of weaker and harmless ones. It is asserted that Melsen's system is more economical than the ordinary one, while its efficiency is said to be beyond doubt. The cost is estimated by the inventor at about 1½d. per square yard. Galvanised iron wire can be used, but nickelled wire is preferable. It is remarked that this system allows of every house being protected against lightning, instead of this precautionary measure being confined to large structures.

A REMARKABLE PICTURE.

AMONGST the art-treasures left by the late Empress of Russia to the Hermitage Art Museum at St. Petersburg, is one to which special interest attaches not only for its history, but on account of the remarkable skill with which it has been restored. It is the so-called "Madonna Conestabile della Staffa" painted on wood in 1502 by Raffaelle for Count Staffa. According to Grimm, this is the only picture of Raffaelle's which has been preserved in the original frame, which it is conjectured was in this instance made according to the great artist's own instructions. It was purchased from the heirs of the Staffa family in 1879 for 12,400*l*., and the Italian Parliament sought to blame the Minister who had given the necessary permission for its leaving the country.

The picture is a round one, and is painted upon a square piece of wood. When in Italy this wood had displayed a slight crack, which in Russia became more developed, and it was decided, in order to preserve the work, to transfer it on to canvas. The process carried out by Herr Sidorow is described by the *Hamburger Nachrichten* as having been effected by the picture being sawn off with a hair-saw, and the crack being then carefully screwed together. A piece of linen and a marble slab were fastened to the front. The wood was then removed by a plane and by glass until the layer of oil-colour alone remained. This displayed the painting in its original form, and showed that the Virgin had at first been represented as holding a pomegranate in her hand, this object having been subsequently altered into a book. Canvas was then fastened to the back, and the temporary arrangements removed from the front.

THE SEWERAGE OF SOUTHPORT.

AT the tenth meeting for the session of the Liverpool Engineering Society, held at the Royal Institution, Colquitt-street, Mr. H. Bramall, M.I.C.E., president, in the chair, a paper entitled "The sewerage system of Southport, and its effects on the sanitary condition of the town," was read by Mr. John B. Fell. Mr. Fell spoke of Southport as a watering-place possessed of remarkable natural advantages, in which a population of three to four millions of people, living within a distance of fifty miles of Southport, were more or less interested. The natural purity of the air, fresh sea breezes, dryness of the climate, and its open, clear, and well-built streets, combined, ought to make Southport one of the most healthy of all health resorts. But with these advantages the sanitary condition of the town was not all that could be desired, and the cause was believed to be the condition of the sewers. The entire area of the town is flat, the sewers have been chiefly laid on gradients so flat as not to be self-cleansing, and they are tide-locked. The gravitation system on which the sewers have been constructed has the recommendation of economy in working and maintenance, and the new outfall sewers have removed the discharge of the sewage from the foreshore to the estuary of the Ribble, whence it is carried by the receding tide right out to sea. But the flatness of the sewers, by allowing deposits to form, and decomposition of sewage matter, and the generation of sewer gas to take place, has been the cause of much annoyance to the inhabitants of certain parts of the town, especially in those parts traversed by the lines of the main sewers. A number of different plans have been proposed for the removal of this evil. One plan is the entire reconstruction of the sewers of the town upon Shone's pneumatic ejector system, by which the nuisance would be put an end to. The expense would,

probably, be not less than 100,000*l.*, but this consideration ought not to weigh against the adoption of a method which, it is believed, would entirely remedy the evils now complained of. The Corporation have proposed a plan for improving the gradients of a number of the lateral sewers, but these, according to the opinion of eminent sanitary engineers, would still be sewers of deposit, and, consequently, this plan would not prevent the generation of noxious sewer gases or provide a remedy for the existing evils. Several plans for an improved ventilation of the sewers were also described. These plans, if adopted in combination with an improved method of flushing, might, the author believed, at a comparatively small cost, effect a diminution of the sewer-gas nuisance to such an extent as to remove the present cause of complaint, and be the means of raising the standard of health to a higher level.

The Corporation have received the sanction of the Local Government Board for the borrowing of 20,000*l.*, and their scheme, we are informed, has been approved by the inspector. Intimation has also been given to this effect to the opponents of the scheme. At a meeting of the committee, held last week, it was decided to commence the works forthwith.

NOTES FROM BIRMINGHAM.

SIR,—It will perhaps interest those of your readers who notice animal life in its various phases and vicissitudes, to be informed that recently, as a bait-gatherer who is employed by one of our local firms of fishing-tackle manufacturers was engaged in his employment near one of our small rivers, he observed a dead trout, of about a pound weight, floating on its surface. On examining the fish, he found that it had been choked to death in an endeavour to gorge a large toad head foremost, only the hind-legs of the toad being protruded from its mouth. A similar instance of voracity in a freshwater fish was seen not long since, when a dace was found dead with the hind-legs of a rat only visible: each had choked the other. A third instance of this voracity was discovered a few days ago in this neighbourhood, when a dead pike was found floating on a river, with a large perch stuck in its throat, and a large portion of its tail gone,—bitten off, presumably, after death by another pike.

Birmingham is not badly supplied with sea-fish, when compared with many other towns, and it will doubtless be improved when the new and larger market is completed. The fish are usually consigned from the ports to some wholesale dealer here, who disposes of them, when in quantity, by auction, and thus they get into the hands of the retailers. Game and poultry are also sold in the season in the same manner, and often in very small lots. Much larger fish are now brought to market than formerly, in consequence of the new and improved appliances for catching them. Recently we had a halibut in the market nearly 6 ft. long, and others of a slightly smaller size are common.

The half-yearly horse-fair was held in Birmingham on the 17th inst., and there was a smaller number of animals on sale than for some years past; but many animals were of good quality in their several classes. The ruling prices were, for wagon horses, 60*l.* to 80*l.*; cart ditto, 40*l.* to 60*l.*; cobs and ponies, 12 guineas to 20 guineas; strong wagon colts, 35*l.* to 45*l.*; cart colts, 14*l.* to 20*l.*; small colts, 12*l.* to 15*l.* The fair is held in the street called the Horse Fair and Bristol-street, and is a great obstruction to the traffic. The Markets Committee might well consider the desirability of holding the fair in the future in their new market at Smithfield, a much more suitable locality. The covering-in of this market with an iron and slate roof and Rendle's patent glazing is now nearly completed, and the new block of buildings intended for the hotel to replace the "Woolpack" is also nearly covered in, and the scaffolding being removed. The elevations are of red brick and terra cotta, and are exceedingly effective.

The Church of St. Philip, in which the Birmingham Musical Festivals were first held, and many of our finest oratorios first produced, after having been rebuilt in 1859 is about to undergo another alteration. The entire chancel end is being taken down, and it is intended to extend it by some 20 ft.

A new Roman Catholic church is about to be built in Alcester-street, at a cost of some 5,000*l.*, from designs by a firm of London architects.

The forthcoming visit of Mr. Bright to Birmingham is to be utilised to unveil a new marble statue of the late Mr. J. S. Wright by Mr. Williamson, sculptor, of Esher. The site adopted is at the vacant end of the refuge in front of the Council-house, the statue of Priestley being at the other end, and the work of the same sculptor.

The Building Trades Exhibition, which has been held in Bingley Hall during the month of May, has been visited by 60,000 people, and is believed to have been fairly satisfactory to both exhibitors and the public. The show has been remarkable for the excellence of quality in the productions displayed, and is in contrast in that way to those we meet with in the course of business. If manufacturers took as much care to have all their productions perfect as they have done with those they exhibit in the show, we should have a more lively satisfaction in the use of them. None of the exhibits in the building trades proper were particularly new, or were shown here for the first time. As might be expected in the metropolis of the metal trades, the strength of the exhibition is in metal work of all kinds, but the sanitary, constructive, decorative, and furnishing branches, as well as that of the architectural draughtsman, is well represented, both by local firms and others from a distance. Of the new productions, a method of turning and polishing perfectly true cylinders and spheres of glass for pumps and other apparatus used in acid and other manufactories, was shown under Chedgey's patents, together with their glass-lined pipes for the conveyance of liquids. The patent albo-carbon light is also a new method of increasing the illuminating power of ordinary coal gas, by the addition in the burner itself of a carbon made from the waste products of coal-gas distillatiou. This substance is not unlike stick sulphur in appearance, and is placed in a globular receptacle attached to the gas-pendant, and covered with a screw cap. Above the globe there is inserted in the inlet-pipe a hollow disc of considerable diameter, in which is placed a diaphragm, which is of slightly less diameter than the disc. The burners are placed in a circle under this disc, which is made of copper, and in use becomes greatly heated, and as the gas passes through it, heats the gas, which then passing on downwards volatilises the solid carbon, and thus enriched passes on to the burner. The price at which these are at present sold is almost prohibitive to the general public, and I have it on good authority that they bear a profit of from 400 to 500 per cent. The thought that naturally arises is this, that no such arrangement for augmenting the illuminating power of gas ought to be necessary. The gas might be carbonised to the necessary extent in the works when made. A new gas-engine exhibited by a Manchester firm was a good specimen of workmanship, and nearly silent, and is likely to compete successfully with the "Otto," the merits of which are undisputed; but the high price at which the latter is sold has set inventors to work to produce something which shall be less costly. A guard for circular saws is an ingenious arrangement to prevent accidents when in use. Many other exhibits deserve notice, and the promoters have announced another exhibition for 1884.

The statement on page 722 of the *Builder* as to the enormous deposits in the Post Office Savings Banks during the past year provokes the regret that the institution is not self-supporting. A reference to the official returns of the national expenditure for 1881-2, which is the latest available, shows that the national debt is partly made up by 2,144,562*l.* savings-bank deficit, and that the deficiency for the year 1882-3 was 41,836*l.*, and the Friendly Societies' deficiency, to be made up out of the national funds, was 49,326*l.* on the year. This surely ought not to be.

At the annual meeting of the Old Union Flour Mill Company, of Birmingham, reference was made to the keen competition which the millers of this country had now to contend with from the millers in the United States, and the manager stated that, at the present time, there was the enormous quantity of one million sacks of American flour in this country awaiting sale and consumption.

The waifs and strays of onr great towns continue to be an important social difficulty. Mr. Samuel Smith, M.P. for Liverpool, tells us, in the *Nineteenth Century*, "that he has little doubt there are from one-half to three-quarters of a million of children so destitute and neglected that, according to the laws existing in America, they would become wards of the State." This statement should be to all of us sufficiently appalling to arouse us to immediate action. Of its truth there can be no doubt, and various agencies are at work to rescue these poor children from poverty and crime. We have one of these in Birmingham, where Mr. Middlemore's emigration house is well known and appreciated. Some ten or eleven years ago, on his return to Birmingham after a residence of five years in America, Mr. John T. Middlemore resolved to set to work to rescue some at least of the little street arabs from their miserable condition, and having taken two houses in St. Luke's-road, he opened them as a home, in which the children were to be received and taught prior to their being sent to more permanent homes in America. During the first year he received and took to Canada twenty-nine boys and girls, whom he succeeded in placing out in the homes of farmers and others requiring help. Having satisfied himself that there was a large field in our North-American Dominion for the successful carrying out of his scheme, he returned to Birmingham and prepared to repeat his operation yearly. The numbers increased. Larger and more commodious homes have been built where the children can be received and kept for several months, and taught; and every year seventy to eighty children are taken out to Canada and provided for, so that in ten years 750 children have been taught how to get an honest living, and placed in a position to reach it. In a few days 125 to 130 more are going to Canada in the steamer *Circassian*. In a printed statement issued by Mr. Middlemore, he says, "For every girl we take to Canada, I have from ten to fifteen anxious applicants. In the course of ten years we have taken upwards of 700 children to Canada, and it has never been a matter of difficulty to find homes for them. The search for homes has involved considerable railway travelling, and also excursions into the backwoods, but nothing more, and it has never been necessary to put a boy or girl into a home which I did not like because there was no other home open to them. There is thus a large field for the immigration of children in Canada, as there is also in every British colony." Of the sixteen boys and thirteen girls who formed the first batch in 1872, three boys have now farms of their own, two are partners in farms, two are blacksmiths in business for themselves, two are market gardeners, and the rest work for wages on farms not their own. Of the girls, three are married, one has a farm, several have been adopted into the farmers' families as daughters, and the rest are in domestic service; only one has gone at all wrong. The average cost per child is 16*l.* That Mr. Middlemore has done good service to us and to the children is very palpable, and he deserves our warmest thanks and support, but as an intelligent Englishman I cannot but feel shame and disgrace at a condition of society which makes such action necessary or desirable. "Is our civilisation a failure? Why should it be necessary to expatriate the rising generation, when so many thousands of acres of the land of the United Kingdom remain untilled? Why cannot the soil of England be cultivated as well as the soil of Canada? At present much of it is fast returning to its original wild state for want of human labour. I read of 10,000 acres in Essex wanting cultivators, and the ten farms in this neighbourhood I mentioned in one of my letters to you several years ago, are still unlet, the owner,—a very rich man,—requiring as rent more money than any tenant is willing to pay, and at present there is no power to compel him to cease playing the part of the dog in the manger.

E. G.

A Memorial to Alexander II.—The designs submitted in the first competition for this monument not having satisfied the jury, invitations have been sent out for a second competition. The monument is to be erected in the Place d'Armes, Kremlin, Moscow. The material may be granite, porphyry, marble, or bronze. Foreign artists will be permitted to compete with those of Russia for the work. The cost of the monument is not to exceed one million roubles (150,000*l.*). Four prizes, ranging from 2,000 to 6,000 roubles, will be given for the best designs.

MADAME TUSSAUD AND SONS' WAX-WORKS.

"Nunc magna mei sub terras ibit imago."
VIRGIL.

THIS ever-favourite exhibition will shortly be removed from Baker-street to some new premises which are being erected in the Marylebone-road. The new site is that of the Gothic granary, taken down some years since, lying between Allsop-place (so called from a former farm here) and the western end of Nottingham-terrace, facing the Union. For these premises were purchased some interior fittings, including the grand marble staircase, from Mr. Albert Grant's mansion at Kensington Gore. With the exception of the "Play of the Dead Volks" or "Ragged Regiment," now ranged above Abbot Islip's Chapel at Westminster, this may claim to be the oldest existing exhibition of its kind in Europe, surpassing what the Strand Exchange or Mrs. Salmon's shows could have possibly been, even in their best days; though the latter was subsequently enriched with Montanari's beautiful groups of Mexicans and North American Indians recently shown at the now dissolved Polytechnic Institution.

Thornhill painted the ceiling of the Hall of Kings in the Baker-street rooms, where the royal portraits,—three of them by Hayter, Lawrence, and Reynolds,—are far from contemptible. Some of the heads of the figures, notably those of Voltaire, Alexander of Russia, Louis XVI. and his Queen (modelled in 1790, and first exhibited at La Petite Trianon), Nelson, Buonaparte (1815), and Scott (1828), were executed from the life, whilst many of the not very attractive heads in the Chamber of Horrors are from the hands of Madame Tussaud herself, being a branch of her art in which she particularly excelled. A native of Berne, where she was born in the year 1760, Madame Tussaud often met Voltaire, Rousseau, Mirabeau, La Fayette, and Franklin,—a strange commingling,—at the house of her uncle, Dr. Curtius, and was permitted to take casts of their features. Preceptress of modelling and drawing to the Princess Elizabeth and many members of the French nobility, she but too soon found ample scope for her own peculiar abilities amongst the scenes and chief actors of the Revolution. She modelled Marat, Danton, Robespierre, and it is said several heads immediately after their decapitation. Madame Tussaud then turned her attention to more illustrious and less notorious personages, and brought her collection to England just eighty years ago. The descendant of a family remarkable for longevity, she lived until 1850, leaving some highly entertaining memoirs, besides a curious narrative of the dreadful episodes of which she had been an eye-witness.

THE NEW FISH MARKET IN SOUTH LONDON.

THE new fish-market at Newington, near the Elephant and Castle Station of the London, Chatham, and Dover Railway, of which we have already made mention, and which is promoted by a company at the head of which is Mr. Samuel Plimsoll, will be permanently opened on Tuesday next. The site is immediately to the east of the railway, bounded on the south by New Kent-road, and on the north by Rockingham-street, and when fully completed the market will occupy an area of about an acre, but for the present only a portion of the intended market has been erected. It runs from east to west, parallel with the New Kent-road, from which there are two entrances. It is 200 ft. in length, and upwards of 100 ft. in width, and consists of five bays of about 40 ft. in height, covered in by a roof of corrugated iron supported by wooden columns and principals. At the east end are the manager's and other offices, together with the weighing machines and apparatus in connexion, whilst at the west end an official fish-salesman's rostrum has been erected. The floor of the market has been raised to a height of 3 ft. above the level of a line of rails running alongside and parallel with it, and on to this line of rails the fish-laden trucks will be lowered from the Chatham and Dover Railway above, by an hydraulic lift, in addition to which there will be communication between the market and the railway by a broad flight of stairs. The floor of the market has been laid with asphalte, and conveniently arranged for washing and cleansing. For the accommodation of salesmen and dealers who may make use of the market, there are about 100 stalls, having zinc facings. In addition to the entrances in the New Kent-road, there are also two entrances in Falmouth-road, and another in Rockingham-street.

Mr. Landsdowne is the architect of the building, which has been erected by the company's workmen under the personal superintendence of Mr. Plimsoll.

BRIGHTON.

A Railway to the "Devil's Dyke."—On Saturday last the ceremony of turning the first sod of a railway between Brighton and the Devil's Dyke was performed by the deputy-mayoress of the town. The new railway will start at the West Brighton Station of the London and Brighton Railway Company's system, pass the south-western corner of the new cemetery at Hove, and skirting Hangleton Church and Skeleton Barn, will cross the high road to the Dyke, and then curve round by Seddlescombe, finishing a little to the south of the Dyke Hotel. Owing to the steepness of the ascent, the line will be somewhat serpentine, so as to take the easiest gradients, and there will be no tunnels. Though the Dyke is calculated to be between five and six miles from Brighton, the actual length of the new line will be somewhat less, as the West Brighton Station is well on the way; and it is thought probable that the line will be completed by the end of the present year.

Closing of Hove Burial Ground.—An Order in Council has been issued which prohibits any new burial-ground being opened in the parish of Hove without the sanction of the Home Secretary; and it sets forth that all burials in the parish churchyard shall be discontinued. Exceptions, however, are made in favour of vaults and steined graves, on condition that every coffin buried therein is enclosed by masonry; also, in favour of such earthen graves as may be opened to a depth of 5 ft. without exposing the coffins already deposited therein or disturbing human remains.

NEW CLUB PREMISES, BELFAST.

THE Committee of the Ulster Reform Club have secured a site for their proposed new building in Royal Avenue, and plans have been prepared for the building. The new club is to occupy a vacant space next to the Provincial Bank, and the frontage of the building will be in the line of the new buildings on the west of the street, so that the south corner of the new club will project between seven and eight yards beyond the line of the bank front, affording a good opportunity for architectural effect, and enabling the members of the club to overlook a large portion of Donegall-place, Castle-place, and Royal Avenue. The entrance to the club is to be at this corner, and will take the form of an open stone porch or lounge, with granite pillars, and a stone balustrade facing east and south. The front door will open into a spacious vestibule, which will communicate with the hall and staircase, 33 ft. by 20 ft. On the principal floor will be provided a dining-room, 46 ft. by 43 ft., with a small minstrels' gallery or balcony at one end. This room will be 21 ft. high, and well lighted, having, besides other windows, two large bay-windows, commanding a view of the whole of Royal Avenue. The ceiling will be panelled in wood. The fireplace will be deeply embayed in the wall of an alcove, separated from the main body of the room by enriched pillars. The morning-room will also be approached directly from the main landing, and will be 34 ft. by 27 ft., well lighted with tall windows to the south, a bay-window to the avenue, and a large bay-window over the porch. A door of communication will enable this room to be used in conjunction with the dining-room on special occasions. In addition to these rooms, there will be on this floor a strangers' room and two large and well-lighted rooms for private dining or drawing rooms. As the dining and morning rooms are lofty, it has been found possible to interpose a mezzanine floor between a portion of the first and second floors, and the rooms thus gained are a committee-room, a library, 26 ft. by 19 ft. 6 in., and a smoke-room, 38 ft. by 19 ft. The only club, rooms in the second floor are the billiard-room 70 ft. by 30 ft., and a card-room. The former occupies the whole of the front of the building, and, besides the light obtained from continuous windows in the roof, has a series of windows facing the Royal Avenue and the south. The service arrangements are very ample and complete. The kitchens occupy the whole of the third floor, and are entirely isolated from the rest of the building, excepting by the service-stairs and the various hoists. The chief kitchen is 38 ft. by 19 ft., and besides this there are a spacious scullery and a vegetable kitchen, and ample larder and pantry accommodation. The whole of the ground-floor, with the exception of the hall, staircase, &c., already enumerated, will be available for letting. The material for the fronts is to be red Dumfries stone, with a little granite about the principal doorways. The internal fittings will be chiefly of pitch pine; the ceiling in nearly all the club-rooms will be framed in this material, and relieved with white Onega wood, and varnished. The cost of the building is estimated at 12,000*l*. The chief contract has been taken by Mr. James Henry, of Belfast, who will carry it out under the superintendence of the architects, Messrs. Maxwell & Tuke, of Manchester.

THE HEADQUARTERS OF THE METROPOLITAN FIRE BRIGADE.

THE chief station and offices of the Metropolitan Fire Brigade, in Southwark Bridge-road, are undergoing an extensive enlargement by the erection of a new block of buildings immediately adjoining the present premises. The site of the new buildings is the ground in front of Winchester House, which in former years was the town residence of the bishops of Winchester. The new buildings have a frontage to Southwark Bridge-road of 212 ft. in length, and contain four floors in addition to a basement, the height of the main building from the ground line to the ridge of the roof being 60 ft. The elevation is faced with red brick, with Portland stone freely introduced for dressings and ornamentation. It has a lofty central entrance in Portland stone, 12 ft. in width, and 25 ft. in height, carried up to the top of the first-floor windows. The entrance is flanked on each side with piers and pinnacles, also in Portland stone, the extreme width of the piers and entrance being 36 ft. The general face of the elevation is surmounted by a range of ornamental pediment dormers, mainly in Portland stone. The central portion of the frontage is surmounted by a handsome gable, with pinnacles at each angle, above which is a turret, 98 ft. in height from the street level.

The building internally, on the several floors, contains a large number of additional apartments for the members of the brigade, thirty-five of these apartments serving as the residences of married members, and twenty-five for unmarried firemen. Another spacious apartment consists of the instruction-room, and there are also apartments for the superior officers of the force, whilst at the rear of the building are the Superintendent's offices and those of the Engineer.

The architect of the buildings is one of the members of the staff acting under the supervision of the Superintending Architect of the Metropolitan Board of Works, and Messrs. Stimpson & Co., of Brompton-road, are the contractors. The cost of the buildings will be upwards of 25,000*l*.

TERRA-COTTA STATUARY.

MESSRS. STIFF have been exhibiting a fine group of statuary, representing "Agriculture," which they have just executed for the Government of India. It is one of four groups, in buff terra-cotta, intended for the adornment of some important new buildings in Calcutta. The designs for the whole have been approved by the Government of India. Each group will consist of a central ideal figure, flanked by a European and a native. The group "Agriculture," consists of a central figure of Ceres, with sickle in right hand, and some ears of corn in left hand. On her right hand stands a European indigo-planter, and on her left an Indian agriculturist is resting by his plough. The total length of the group is 10 ft. 3 in., and the height of the central figure including plinth, is 8 ft. 4 in. The group has been fired to such a degree of hardness, it is claimed, as to render the work imperishable. Each figure is in one piece. The sculptor is Mr. W. F. Woodington, and the manufacturers are Messrs. Stiff & Sons, of London Pottery, Lambeth. We may find an opportunity to give a view of the group.

BUILDING PATENT RECORD.*

APPLICATIONS FOR LETTERS PATENT.

2,613. F. Newman, Ryde. Appliance for flushing and inspecting drains. May 25, 1883.

2,693. J. A. Meginn, Liverpool. Graining of painted or coloured surfaces. May 30, 1883.

2,698. J. Waple, London. Chimney-tops and ventilators. May 30, 1883.

NOTICE TO PROCEED

has been given by the following applicants on the date named:—

June 1, 1883.

309. S. Hart, Hull. Construction of factory chimney-shafts. Jan. 18, 1883.

481. R. Stone, New York, U.S.A. Apparatus for hoisting stone, &c. Jan. 29, 1883.

489. J. A. B. Bennett, King's Heath; J. Herd and P. B. Walker, Edgbaston. Heating and cooking stoves. Jan. 30, 1883.

511. L. W. Leeds, London. Radiators for heating purposes. Jan. 30, 1883.

842. A. M. Clark, London. Extensible fire-escape ladders. (Com. by D. D. Hayes, San Francisco.) Feb. 14, 1883.

ABRIDGMENTS OF SPECIFICATIONS.

***Published during the Week ending June* 2, 1883.**

4,700. S. Sturn, Cologne. Stoves, fireplaces, and kitchen ranges. Oct. 3, 1882. Price 2d.

One or more fixed or movable gratings are placed between the fire and the entrance to the chimney, instead of the usual damper. (*Pro. Pro.*)

4,074. B. J. La Mothe, New York, U.S.A. Metallic frames for furniture, &c. Oct. 3, 1882. Price 6d.

These frames are made of tubes and bars of metal hinged together at the places where they fold or turn.

4,715. J. Bateman, London. Stoves and fireplaces. Oct. 4, 1882. Price 6d.

Various-shaped tubes are heated by gasburners. These tubes are made partially of wire or wire-gauze, and covered with asbestos, and the air to be heated passes through them.

4,726. W. A. Barlow, London. Door-lock or latch-checks. (Com. by F. W. Boldt and P. C. A. Vogel, Hamburg.) Oct. 4, 1882. Price 6d.

The locking-plate has a hinged check bar, with a pear-shaped slot, with an incline formed cn one edge. The latch has a spring-bolt, with a conical bevelled head, and when the door is closed the bolt automatically engages the check bar.

4,727. W. A. Barlow, London. Trapping sewers and drains. (Com. by L. Henry, Brussels.) Oct. 4, 1882. Price 6d.

This apparatus consists of an oblong box open at both ends, and the end towards the sewer has a lever door hung on trunnions and balanced by a weight so that the slightest pressurs from the inside opens it.

4,739. A. Gendebien, Brussels. Ventilators. Oct. 5, 1882. Price 2d.

The outlets are tangential to the air inlets, and twin ventilators are arranged suppresssng the arms, the axis, and the inside pallets. (*Pro. Pro.*)

* Compiled by Hart & Co., Patent Agents, 186, Fleet-street.

THE QUEEN'S THEATRE IN LONG ACRE.

SALE AT THE AUCTION MART.

IT will be remembered that some two or three years ago the Queen's Theatre in Long Acre was purchased by the Universities Co-operative Association, and at an outlay of upwards of 25,000*l.* was internally completely re-constructed for co-operative trading purposes Like several other similar associations, however, which came into existence during what may be termed the co-operative mania, the Universities Association resulted in failure, and for some time past the building has been closed. On Tuesday the property was submitted for sale at the Auction Mart, under an order of the Court of Chancery in the case of "Carr *v.* The Universities Co-operative Association, Limited, and Others," Mr. Edward Tewson, of the firm of of Debenham, Tewson, Farmer, & Bridgewater, conducting the sale. The property was described as leasehold, held from the Mercers' Company for a term of which 33¼ years are now unexpired, at a ground-rent of 100*l.* per annum. The particulars stated that the property occupies an area of about 10,000 square feet, possessing frontages to Long Acre, Wilson-street, and Charles-street. Formerly the Queen's Theatre, it had been converted at a great expense for the purposes of the Universities Co-operative Association, and could be readily divided into several warehouses or premises suitable for carriage-builders, printing works, or other trades. The first bid made for the property was 4,000*l.*, and it was ultimately sold for 9,200*l.*, being about one-third of the sum which was recently expended in the re-construction of the building. Following upon the sale of the former theatre, some adjoining leasehold property was next offered. It consisted of premises in Long Acre, covering an area of 850 square feet, forming buildings which had been occupied by the Association along with the theatre, and held from the Mercers' Company, for an unexpired term of 33 years, at a ground-rent of 50*l.* per annum. It was sold for 1,300*l.*, the two properties thus realising 10,500*l.*

DISTRICT SURVEYORS AND TIMBER STAGES.

MR. F. WALLEN, DISTRICT SURVEYOR OF ST. PANCRAS WEST, AND MR. G. T. B. COBBETT.

IT will be remembered that this was a summons taken out by Mr. Wallen, Marylebone Police Court, against Mr. G. T. B. Cobbett, for erecting a timber stage, such stage being, in the district surveyor's opinion, a structure contrary to the Building Act, 1855. The case was reported in last week's *Builder*, p. 759.

In the absence of Mr. De Rutzen, Mr. Cooke, magistrate, delivered judgment on his behalf in this case. His Worship, after stating that the question was simply whether a stage erected for drying and stacking timber was a building within the Act or not, said, that without going into reasons he could come to no other conclusion than that it was not within the Act. He must, therefore, dismiss the summons which had been taken out by the district surveyor against Mr. Cobbett.

ARBITRATION CASE.

LONGCROFT HALL MANSION, NEAR BURTON-ON-TRENT.

THE new owner of this property, Mr. A. H. Arden, having decided to restore and renovate the same, called in, in October, 1880, the services of the firm of builders, Messrs. T. Lowe & Sons, of Burton-on-Trent, to prepare details, and proceed with the works, and shortly after the same had been put in hand various additional works were found necessary to be done in order to properly complete the building.

After the conclusion of the works, various questions arose between the parties as to whether an approximate estimate, which had first been given for a portion of the works, formed the basis of the contract; whether the builders were liable for damage to the works by frost, and for the repairs to the glass broken by the workmen; and further, as to the method employed in cleaning and renovating the old oak work, together with certain counter claims by the proprietor; and several other issues, including the valuation of the works.

It was, therefore, decided in December last to refer, by mutual consent, the whole matter to the arbitration and decision of Mr. G. Gard Pye, architect, of Bucklersbury, and Mr. Robey E. Carpenter, architect, of Stapenhill, Burton-on-Trent; or, in case of their disagreement, to the umpire appointed by them, Mr. Chas. Barry, F.S.A., architect.

After a searching inquiry, extending over twenty-two days' sittings, and the examination of upwards of twenty witnesses, at the Hall and in London, the arbitrators have now agreed upon and published their award without going to their umpire. The arbitrators were assisted throughout by Mr. Hugman, of the firm of Messrs. Fowler & Hugman, surveyors, of 20, Spring-gardens, and Mr. Henry Riley, surveyor, of Burton-on-Trent.

The solicitors engaged in the case were Mr. H. Goodger, of Burton-on-Trent, for Messrs. Lowe; Messrs. Booty & Bayliffe, of Gray's-inn, for Mr. Arden; and Messrs. Gadsden & Treherne, of Bedford-row, for the arbitrators.

The case involved many complicated points, and a sum of upwards of 3,000*l.*

WORK AT WEST HAM.

AT West Ham, Thomas Casey, a builder, of 88, Boleyn-road, Kings'and, was summoned for unlawfully constructing the walls of certain houses now in course of erection by him in Garfield-road, Plaistow, without having properly bonded and solidly put the same together with mortar or cement, contrary to the by-laws of the West Ham Local Beard.

Lockyer Sandilands, one of the building inspectors of the Local Board, said that the defendant had deposited plans of four houses he intended to erect in Garfield-road, Plaistow. He began the work on the 4th of May, and on the 8th, when witness went to the building to examine it, he found that the walls were not properly bonded, and that bad mortar was being used. Witness complained to the defendant of the bad work, and on the 19th of May sent him a letter requesting him to discontinue the work, and another one on the 21st. On May the 28th, a sample of the mortar (produced in court) was taken and found to consist mostly of mould and lime, with little, if any, grit.

Defendant said he had only received two of the letters referred to, and that he stopped all his men as soon as he was spoken to by the inspector. He was willing now, he said, to make whatever alterations were necessary. Mr. Sandilands said nothing but the pulling down of the work would suffice, and defendant then said he would do the work if it was required.

Mr. Philips said this being so, he should simply impose a fine of 1*l.* and the costs. The penalty was 5*l.*, with a continuing fine of 40*s.* per day after notice had been given by the Local Board. In default of paying the fine a distress would follow, and in default of distress fourteen days' imprisonment.

Defendant said he would pull down the walls, and as the next week's work would be a dead loss to him, he asked for time to enable him to pay the money. He was allowed a fortnight.

ART PROBLEMS.

SIR,—Everything goes halting in art, because in all questions relating to it common sense, as a rule, is disregarded. As compared with other subjects, there is a want of directness and clearness in the treatment of æsthetics. The man who sets himself to vanquish art problems,— problems which offer the stoutest resistance to the investigating and the combative intellect,—deems it only necessary to pose himself in a fighting attitude, shut the eyes of his intellect, and, with a liberal use of jargon and tall talk, to beat the air. But, of course, this method of proceeding leaves the question which should have been mastered quite untouched. This kind of thing has been going on through the years, and is still the fashion of the time,—in an age, too, which professes to be intensely scientific! No, sir, this kind of thing must be put a stop to. If progress and useful knowledge be desired in art, as in other sections of inquiry, we must, as in other subjects which formerly thwarted analysis, learn where to grip art, that we may wrestle with it effectually.

I was led to these reflections by a passage in a letter in the *Builder* of the 26th ult., p. 725, entitled "Looking Back":—"We love beauty and truth, and hate ugliness and lies wherever we find them." Now, to *hate ugliness* wherever we should find it would be as diabolical as to love lying, for ugliness inheres in nature, in reference to human eyes. Who made the ape, the hippopotamus, "the toad, ugly and venomous," as well as the human form, the gazelle, the lily, &c.? To require everything to be beautiful is one of the insanities and demoralising influences of the day. "Who is to love the ugly, aunt?" asked a little niece of her relative, who was trying to imbue the child with what, in the canting phraseology of the time, is termed *the ineffable sense of the beautiful*. "I thought," continued the child, "it was easy enough to love the beautiful. We all are ready to like and love the beautiful, you know; but I thought it had been commanded that we were not to love the beautiful too much, because it is sinful!" The child intuitively detected the shallow and absurd heresy that would insist on the hating of any ugliness but moral deformity. To do so would, indeed, exhibit an ill-constituted mind, a mind on a par with such as may now and then be heard giving expression to this low sentiment,—"Look at that ugly brute!" as if God's creatures, high or low, had made themselves.

The exhortations to "design with beauty," and "to build in truth," if not misleading, are quite too vague to be of the slightest practical utility. In all design, adaptation to purpose should be the main aim, whether that course result either in beauty or in ugliness. The realisation of the beautiful for the gratification of taste is a special purpose, whereas, from want of analytical power in those who discourse upon art, the realisation of the beautiful is erroneously held up to be the whole duty of art.

W. C. T.

RED SEA AND MEDITERRANEAN JUNCTION AND VALLEY OF THE JORDAN.

SIR,—The late Admiral Sir George Cockburn (no mean authority) thought the junction of the Red Sea and the Mediterranean, through the Ghor and the valley of the Jordan, practicable; and, as a visitor at his house at High Beech, I, with him, looked into the matter. Captain Allen, from surveying in the Red Sea, brought Sir George levels and particulars, and afterwards a report; part of this will be found in the British Museum, in "Philosophical Transactions," about forty years ago, I believe; and I am sorry to find you dismiss the matter without further inquiry,* as I firmly believe it is practicable with money and little engineering skill (notwithstanding all your figures are true), and if done it would be incomparably the best means of uniting the two seas, and the cheapest, as it would require no dredging and very little maintenance. And, further, I almost believe no power on earth can prevent its being done. Most certainly, after reading Ezekiel xlvii., which describes the mighty flood you show would be the result, it should be still further considered.

I believe the northern arm of the Red Sea once ran into the Ghor, probably up to the Sea of Galilee,

* See p. 600, *ante*.

heading back the upland waters, and forming a large freshwater sea. I believe by the upheaval of a coral bank at Akaba the Red Sea was cut off from the Ghor, and the salt water evaporated, until it and the supply from the Jordan became *in equilibrio*, which left an intensely bitter lake at the bottom, called the Dead Sea. The Mediterranean is about 12 ft. below the Red Sea, and 1,250 ft. above the Dead Sea. The Ghor is a deep valley, a tremendous ditch (dry from Red Sea to the Dead Sea). If the coral bank at Akaba were blown away the water would run into the Ghor towards the Dead Sea, and lengthen the northern horn of the Red Sea. Between the Ghor and the Mediterranean, the hills on the banks of the Ghor rise up over 1,500 ft. of tremendously hard rock, while above the Dead Sea in the valley of the Jordan they sink down to 200 ft. Now, if the water were simply let in from the Red Sea to the Dead Sea and from the Mediterranean to the valley of the Jordan an uninterrupted waterway with a gentle scour would exist between the two seas, the canal part on the plain being through a soil which would never silt up. This communication would be perfect, but it would cover much lowland (other land would be gained, however), but if worth while, it would be very easy to regulate the depth of the water flowing in above the Dead Sea, and make a hydraulic lift into the canal and into the Red Sea. In the deeper cutting, stone would be recovered worth quarrying, and, being through stone for the short distance where the cutting is deepest, the banks could be very perpendicular. I have not the levels here, but I know the whole subject well, and, I hope from what is shown, you will allow that the matter should be further considered.

G. PEARCE POCOCK.

Sturry, Kent.

TENSILE AND CROSS STRAINS.

SIR,—All manufacturers of artificial building materials and all dealers in natural materials subjected to cross and tensile strains belong to the pre-scientific age, and are totally ignorant of these qualities of the materials they deal in. In small works the cost of having the materials made up or cut to the required shape and size, and tested, is more than the work will bear, and, consequently, the architect is driven to use iron when he would prefer stone or concrete.

This is no fanciful objection, for I have often been compelled to use iron instead of stone in lintels or corbels. Now that accurate tests may be obtained at a comparatively moderate cost, it may appear incredible, but it is nevertheless true, that the strength of stone to resist tensile and cross strain is impossible to be got. Yet stone is constantly being used in cross strain, and occasionally in tension for pendents.

G. AITCHISON.

THE JOURNEYMAN.

SIR,—Under the heading, "The Future of the Journeyman," your correspondent, Mr. Spence, has dwelt upon the hard fate of the old mechanic. There is no doubt that what he states is quite true. The grey hairs are scouted almost everywhere. If two men apply for one vacancy, the younger one is sure to be selected. It is but natural that such should be the case. The mad competition the London builder of our time has to contend with makes it of vital importance to employ none but the quickest workmen. The establishment of a fund vested in the hands of a committee of our leading employers would, I am sure, be a profitable investment for both master and man, and would lead to the best results, as, of course, none but those who could prove themselves to have been what a mechanic ought to be could be allowed to receive its benefits. It would act as a powerful incentive (sorely needed) to uprightness of conduct and excellence of work.

A WORKING PLUMBER.

DECORATION OF ST. PAUL'S.

SIR,—Although a long way off, with a clinging towards my native city, I feel a deep interest in its grand cathedral, for I have often attended its services in my early life.

I have just read a letter upon the above subject, published in January last. If not too late, I urge the authorities to reconsider the scheme of decoration, so that the work may speak throughout ages to come of our national character, which, in my mind, will be best exemplified in completing this interesting work with that purity of spirit which actuated the great architect in its commencement.

I left England eighteen years ago, and I went to the cathedral before starting to hear the last service in my native land. I saw the first trial of illumination to the ceiling of the choir, which I contrasted with the delicate foliage and frescos of the dome, regretting that Sir Christopher Wren had not the liberty of completing his own work.

Since I have moved about, I perceive that the sunny climate of Australia may, like other warm skies, encourage severe colours, hard outlines, and deep shadows; but I scarce can credit that the chaste lines of the Corinthian Order lay claim to extreme colour.

Wren sought to teach nobility and purity as the type of our national religion. Let us, in this age of restoration, take care we do not bring about an age of demolition. Let us make God's house the best in the land, purity and sacredness governing every detail, as an expression of the great Architect to whom we owe the praise.—"The earth is the Lord's and the fulness thereof."

W. F. HAMMOND, A.R.I.B.A.

Auckland, New Zealand.

A JOINER'S SHOP AND ITS MANAGEMENT.

SIR,—As a journeyman, I would crave the favour of a reply to "M. A. F." and "Harry Dunkley" on this subject.

It is an undoubted fact that "tipping the foreman" in some shops, and, in a large number, "treating him," has a good effect for one who wants to keep his job; but I would be very sorry indeed to think either of these practices (especially the former) so extensively resorted to as to make them subjects of general interest.

As to favouritism, when I get a job I am seldom troubled with it. Where I encounter it most is in seeking work. In some shops there is a notice, "No Joiners Wanted," which remains up at all times. One needs to find out the name of the foreman there, and ask for him. The difficulty, in a great many cases, is to get past the timekeeper's box. For one who keeps up no acquaintance, and who is not a member of the trade union, this makes seeking work in London a doubly dreary and thankless job. But there is a reason for it. Whenever a foreman wants men and cannot get them, he will discard all favouritism. He will then take on all comers, and pay off those unable to earn their money. The moral of this state of matters is easier seen than acted upon,—*i.e.*, there are too many of us.

T. P. H.

PROVINCIAL NEWS.

Berwick-upon-Tweed.—Mr. Walker, manager to the North British Railway Company, and Mr. Carstairs, engineer to the company, have visited Berwick, and met the Committee of Management for the proposed fishery harbour at the Greenhaven, as well as Mr. J. Watt Sandemann, Newcastle, the engineer of the proposed work. They proceeded to the site of this and examined it, as well as the ground required for the proposed branch railway. They also heard the particulars of the scheme, the advantages of which were pointed out to them. Mr. Walker promised to bring the subject before the directors of the North British Railway Company.

Gloucester.—It is stated that the Ecclesiastical Commissioners have consented to relinquish all prospective or reversionary interest which they may have under lease of some of the houses in College-street, for the purpose of improving the approach to the Cathedral.——Messrs. Robertson & Co., are about to erect new brewery premises in Quay-street, from plans prepared by Mr. W. Bradford, architect and brewers' engineer, London. The contract for the works has been taken by Mr. Alfred King, builder, Gloucester.

Swansea.—The new drill-hall in Singleton-street, which has been erected by Mr. W. Pike for the 3rd Glamorgan Rifle Corps, and which is also intended to be used as a public hall, will be opened this Saturday, the 9th inst. The building is the site of the old malthouse of the Swansea Brewery premises, a site at once central and convenient, and will be one of the largest public halls in the kingdom. It is described by the *Cambrian* as being of the Tuscan style of architecture. The main entrance is 9 ft. wide. Inside the entrance is a lobby of similar proportions, from which there is a staircase leading to a gallery capable of holding 250 persons. The ground-floor of the hall measures 80 ft. by 70 ft. The roof spans the whole of the building with iron principals. There will be accommodation to seat 1,000 guests. Abreast of the corridor is a suite of retiring-rooms, armoury, two large kitchens, and scullery, above which is a minor hall, 60 ft. by 27 ft. At the north end of the large hall is a stage, 45 ft. by 20 ft., which is entered from the minor hall on the one side, other officers' rooms on the other side, making the stage convenient for all kinds of public entertainments. The new buildings has been erected at a cost of 4,000*l.*, the contractor being Mr. Thomas White, and the architect Mr. T. P. Martin.

Scarborough.—On the 1st inst. the report of Sir John Coode, as to the practicability and cost of the proposed road round the Scarborough Castle Cliff, was presented to a committee of the Scarborough Corporation. Sir John says the work presents no engineering difficulties, but is more a matter of finance. In reference to the proposed work at the extreme northern portion of the Castle Cliff, he says that the strength of the sea is greater than in the case of any other undertaking of the kind with which he is acquainted. He divides the project into two parts, one being the whole scheme from Peasholm Beck to the East Pier, and the other from Peasholm Beck to a point known as Coffee-pot Rock. The estimate for the former is 124,680*l.* gross, and for the latter, 48,500*l.*, also gross.

CHURCH-BUILDING NEWS.

Coventry.—At a recent meeting of the Coventry City Council, the Mayor (Mr. A. S. Tomson) in the chair, the Town Clerk, at the opening of the meeting, said he had received a letter from Mr. Seymour, vestry clerk of St. Michael's, relating to the condition of the nave, aisles, chancel, and chapels of St. Michael's Church, and requesting an interview on the subject of the liability of the Corporation of the city, as the lay impropriators, to repair the chancel, with a view of endeavouring to arrange a final settlement of the question. The Town Clerk said he saw the Mayor upon that letter, and with his concurrence replied stating he had consulted the Mayor, who was of opinion that if the question of the liability of the Corporation to repair the chancel of St. Michael's Church was to be raised it would be best for the Council to deal with it from the beginning. At a subsequent meeting of the Council the Town Clerk said he was not able to advise that the Corporation was liable to repair the chancel of St. Michael's Church. The general law no doubt was that lay impropriators were liable to repair the chancels, but that law was not without exceptions. Suits against lay impropriators were extremely rare, but there was a suit in the year 1823, now just half a century ago, by the churchwardens of the parish of Clare against the Bishop of Ely as lay impropriator of the tithes of the parish of Clare to compel the Bishop to repair the chancel of the Parish Church, and that suit failed on the ground that there was from time immemorial an ancient and laudable custom for the parishioners of the parish of Clare to repair their own chancel. As far as he had been able to acquaint himself with the facts, it seemed to him that there was a like ancient and laudable custom in the parish of St. Michael's. He had caused the minute-books of the Council to be searched from the year 1565, the year in which the Corporation became lay impropriators by the purchase in that year of the tithes of Queen Elizabeth, and that search continued down to the year 1700, and there was no minute of repairs having been done to the chancel of St. Michael's Church by the Corporation. Mr. John Oldrid Scott has been consulted as to the contemplated works.

Alsop-en-le-Dale.—Five or six miles from Ashbourn, is the Hamlet of Alsop-en-le-Dale, lying at the feet of two of the great limestone hills which abound in the Peak. Elleshope, or Alsop, was for many hundreds of years the home of the Allsopp family, the present head of which has recently acquired by purchase the property so long held by his ancestors. Sir Henry Allsopp at once gave his assistance to a movement for the restoration of the ancient and dilapidated church which he found in the village. The task of directing the restoration of the church was entrusted to Mr. F. J. Robinson, architect, of Derby. The walls, both inside and out, bad been cleansed from rough casting and plaster, and been neatly pointed in accordance with the original construction. The side walls of the church were raised about 300 years ago, and a flat roof placed over it. The latter had become partly ruinous, and has been removed, and both the external and internal appearance of the sacred edifice has been greatly improved by the lowering of the walls to their original height and the substitution of a high open timber roof. The floors have been entirely replaced, the passages and chancel being laid with Minton tiles, and the remainder with wooden blocks laid transversely. A new stone font, of circular design, has replaced the old one, which was in a very decayed condition; and the carved oak pulpit, now stained and varnished, which was removed from Ashbourn Church four years ago, has been given to the restored

edifice by a friend. The church has been seated with open deal benches, stained and varnished, providing accommodation for eighty persons, and furnished with a warming apparatus. Every care has been taken to preserve the old features of the church; the doorway and chancel arch, with the round-headed window on the south of the nave, and the small piscina in the chancel, which probably was also part of the original structure, have been retained, together with a slab in memory of a centenarian, Anthony Beresford, of Alstonfield (son of Francis and Anne Beresford, of Castern), who died on March 3, 1874, at the age of 102. At the west end a bold tower, in character with the church, has been erected, and in this the old bell has been re-hung, room being left for two others, which it is hoped shortly to place there. The total cost of the work, including the placing of new gates to the churchyard, has been 750*l*.

Chorley.—A new baptistery has just been formed near one of the principal doors of Chorley Parish Church, and into which the font has been removed. The floor of the baptistery has been paved with encaustic tiles, and is surrounded with a brass railing, supported on seven standards of wrought-iron, with brass ornamental crosses in each scroll, the crosses being enriched with ruby jewels. Entrance to the baptistery is obtained through a telescopic slide in the hand-rail, the standards being appropriately painted in various colours. Messrs. Thomas Thomason & Co., of Manchester and Birmingham, have supplied the metallic work, and the whole of the cost is being defrayed by Miss Caroline Master, daughter of the late Rev. Canon Master, who was rector of Chorley for thirty-two years. The church is remarkable for the fact that it contains within its precincts the reputed remains of St. Laurence, its dedicatory saint, whose bones are placed in a recess in the chancel, and are visible through a small glass window. Over the recess is a brass plate bearing the explanatory inscription:—"Within this niche are deposited the relics of St. Laurence, to whom this church is dedicated, which were brought from Normandy by Sir Rowland Standish, Knt., A.D., 1442, and deposited by him in this church. *Vide* Harleian MSS., Cod. 2042, Fo. 239, in the British Museum."

Burton-on-Trent.—A new mission-church, in connexion with St. John's Church, Horninglow, has just been opened. The church, which has been built from designs by Messrs. Giles & Crookhouse, of Derby, is intended to accommodate about 450 persons. It is a plain but substantial Gothic building, having external walls of red brick and stone dressings, while internally the walls are of white bricks with red brick ornamentation. Excluding the chancel, which is separated from the body of the church by curtains, it is 70 ft. long by 30 ft., and the chancel is 16 ft. by 18 ft. The roof is of timber, covered with tiles, and the floor is of wooden blocks. The principal approach, from Hunter-street, is by a spacious porch, and there is another entrance adjoining the chancel for admission to the vestry. In the chancel are permanent choir-stalls, which, like the lectern, are of pitch pine, but the seats in the body of the church are movable, and consist of benches and chairs. Mrs. and Miss Loverock have worked and presented to the church a handsome altar cloth, and the curtains separating the chancel are the work and gift of Mrs. Wright. Messrs. Lowe & Sons were the contractors, the woodwork was done by Messrs. Stevenson & Sons, and the plumbing, &c., by Mr. T. Turner.

DISSENTING CHURCH-BUILDING NEWS.

Oxford.—The large growth of population in the northern suburbs of Oxford induced the Wesleyan Methodist congregation worshipping in Cranham-street to transplant themselves to that suburban quarter, and having secured a site for a new place of worship in Walton-street on ground belonging to St. John's College, they entrusted Mr. Mullett Ellis, architect, of Old Jewry, London, with the commission to prepare plans for the new edifice. The building, which is now in course of erection, is Early English in style. It is faced externally with red brick, and coped with white sandstone. The building is to be seated to accommodate 450 worshippers. In the rear of the church there is a spacious schoolroom, with four vestries and class-rooms beneath. The total cost of the building is 3,000*l*. The contractors for the work anticipate to have the building ready by the 1st of September. On the 17th ult. the four memorial stones were laid at different points at the foot of the building near to the front.

Bermondsey.—A new Baptist mission-hall or chapel is being erected for the Green-walk Mission, and the memorial stone of the building was laid on the 21st ult. The hall will contain accommodation for 700 persons. There will be school and class-rooms attached, and there will be provided a room supplied with newspapers and books for working men. The total cost of the building is estimated at 4,600*l*., and a contract for that sum has been taken by Mr. W. Johnson, of Wandsworth Common. It is estimated that 400*l*. will be required for fittings.

Darlaston.—On the 28th ult. the memorial-stones of a residence for the pastor of the Wesleyan Chapel, Pinfold-street, Darlaston, were laid. The new residence will be on the site of the old one adjoining the chapel, and the contract has been entrusted to Mr. G. P. Butler, of Darlaston, whose estimate is 690*l*., the total cost being estimated at 600*l*.

STAINED GLASS.

The Bunyan Memorial Window, Elstow.—On Sunday, the 29th ult., services were held in Elstow Church, Bedfordshire, by way of dedication of a new stained-glass window in commemoration of "the immortal dreamer," Bunyan, who was born in the parish of Elstow, A.D. 1628. The window has been inserted in the east wall of the south aisle, and contains three lights, with tracery above, representing a series of subjects from "The Pilgrim's Progress," in the following order:—1. The pilgrim, having discovered his burden of sin, is resolved to get rid of it, escapes from the City of Destruction, and starts on his journey crying "Life, Life," amidst the jeers of his neighbours and the entreaties of his wife and children. 2. Evangelist meets him and directs him to Mercy's Gate. 3. He has arrived at the Wicket-gate and knocks for admittance. 4. Pilgrim has arrived at the Cross, and loses his burden, which falls into the tomb, while the three shining ones are ready to give him the new token, the roll of acceptance, and the seal. 5. Christian is in the Valley of Humiliation in conflict with the enemy Apollyon. 6. Christian and Faithful are crossing the River of Death, and welcomed by the shining ones on the heavenly shore. The subjects are divided by bands setting forth the texts in relation thereto. The window was designed by Mr. Thomas W. Camm, of the firm of R. W. Winfield & Company, successors to Camm Brothers, Smethwick and Birmingham, and executed by them.

Arundel.—A further instalment of stained glass is about to be fixed in the R.C. Church of St. Philip at Arundel. The work consists of thirty-two lancet lights, depicting lay saints in different conditions of life, the old and new priesthood being elsewhere given, and one window, showing the founders of religious orders, being in hand, all the work being done under Mr. Joseph Hansom's direction by Messrs. Hardman, of Birmingham, who have supplied all the stained glass for this great work of the Duke of Norfolk.

Miscellanea.

North Wales Quarrymen's Union.—The ninth annual conference of the North Wales Quarrymen's Union was held at Bethesda last week. The annual report described the past year as one of great depression and suffering to men employed in the slate quarries. Many of the younger hands had emigrated, and as others were desirous of following their example, the executive council had under consideration a scheme for acquiring a large tract of land in the United States, and the establishment of a colony, the colonists having the option of purchasing their lots upon easy terms. Trade in North Wales was progressing slowly, and the prospects of the slate trade were improving. There had been a solitary dispute during the year, adjustment of which had cost the union 5*l*. The funds of the organisation had increased during the year by upwards of 1,000*l*., the total assets being 10,891*l*. 3s. 11d. The president and other officers were re-elected, and papers bearing upon the objects of the union were read by members.

Edinburgh Architectural Association.—A supplementary meeting of this association was held in the Professional Hall to hear the continuation of the president's (Mr. MacGibbon's) lecture on "Scotch Castles and Houses." The lecturer pointed out that on the last occasion he had described and illustrated the great buildings of the thirteenth century, which formed a well-marked period in Scotch domestic architecture. Owing to the exhaustion of the country during the war of independence, the castles of the succeeding century were of a much smaller and simpler description. The Norman keep was now the model adopted, and buildings on this plan continued to be erected for several centuries afterwards. These towers were illustrated by plans and drawings of Lochleven Castle, and the towers at Alloa, Clackmannan, Liberton, Preston, Niedpath, Borthwick Castle, &c. In the fifteenth century the condition of the country had improved, and larger and more commodious dwellings were required. In many cases the old towers were preserved and added to by extending buildings round the courtyard till these gradually came to assume the form of a mansion surrounding a quadrangle, as seen in the castles of Craigmillar, Castle Campbell, Crichton, Kilchurn, Balvaird, &c. Some of these castles, however, were enlarged with buildings adjoining, but disconnected from the keep,—such as Huntingtower, in Perthshire, and the Dean, near Kilmarnock. During this period (fifteenth century) new castles were also erected, designed on the plan of a quadrangle, such as Caerlaverock, Doune, Tantallon, &c., which were illustrated and minutely explained. At the conclusion of the lecture a very cordial vote of thanks was accorded.

Proposed New Masonic Temple.—On Wednesday evening, under the presidency of the Earl of Carnarvon, Pro-Grand Master, the quarterly communication of the English Grand Lodge was held. An important report was brought up by the Board of General Purposes, of which Sir John Monckton is president, in relation to the fire which destroyed the temple, where, since 1776, the meetings have been held. It stated that the fine pictures of Grand Masters, and many things of interest, had been destroyed. In regard to the erection of a new temple, the Board did not support a proposal to remove the meeting-place to the Thames Embankment, the great cost of a site there being one objection. The Grand Superintendent of Works, Mr. Horace Jones, had been requested to report as to the best means of carrying out such works as would give the Craft a hall which would seat at least 1,500 brethren, and his proposal was to take in the Great Hall, and to find a site for the hall on land adjacent. He was of opinion that the total expense of this scheme would not exceed 30,000*l*. or 35,000*l*. beyond the sum which would be received from the insurance companies. The report was referred back to the Board of General Purposes for execution.

Malaria in Italy.—The Italian Minister of War, we are told, has had prepared for the use of the military authorities a statistical map showing the extension and relative intensity of malaria throughout the peninsula. This map has been compiled from an exhaustive series of sanitary observations that have been carried on for years in all the provinces of the kingdom. Italy is divided into sixty-nine provinces, of which only six are completely free from this scourge, while it is felt with great severity in twenty-one. It is estimated that 40,000 men, or more than 10 per cent. of the army, are annually victims, many fatally, to malaria, and the annual cost of special hospital arrangements to meet this amounts to over ten million francs. It is noteworthy that malaria seems to have increased both in extent and intensity with the development of railways. This is attributed to the large excavations which are allowed to remain unfilled, becoming in time the seats of stagnant pools or marshes. There are some of the Italian lines which have acquired the reputation of being permanent homes of malarial fever.

Vienna City Railways.—In Mr. Fogerty's letter in our last number (p. 756), there is a typographical error which needs correction, viz., in the twenty-seventh line from the top, where, instead of "Mr. Brunlees," the name should read "Mr. Bunten."

Exhibition of Cutlery in London.—Earl Cairns, on behalf of the Cutlers' Company, opened an exhibition of cutlery in Salters' Hall, on Monday afternoon.

The Hotel Metropole.—In the House of Commons on Monday evening, Mr. Story-Maskelyne asked the Chairman of the Metropolitan Board of Works whether, in reply to a communication from a committee of the Board to the Institute of British Architects regarding the design for the elevation of the Hôtel Métropole, the Council of the Institute stated that, "in the opinion of the Council, the design of that building, more especially as regards the portion above the ground-story, is unworthy of its intended position, and that the said design should be considerably modified before approval be given to it by the Metropolitan Board of Works;" and whether his answer relating to this subject on the 10th of May, to the effect that the Board had sanctioned the erection of the said building without having submitted any altered elevation to the Council of the Institute, still represented the attitude of the Board of Works in regard to this question; and, if it did so, whether he would explain to the House how the Board deemed itself justified in evading the conditions embodied in an Act of Parliament (of 1873).——Sir J. M'Garel Hogg, in replying, said,—I beg to inform the hon. member that his quotation from the letter of the Council of the Institute is perfectly correct, and that my answer of the 10th of May still represents the attitude of the Board in this matter. I cannot however, for one moment admit that the Board has evaded conditions imposed by Parliament. The wording of the Act was intended to convey no more than the suggestion of friendly consultation between the Board and the Council of the Institute, without binding the Board to carry out the suggestions of the Council.——Mr. Story-Maskelyne further asked whether one of the architects concerned in the erection of these new buildings in Northumberland-avenue was not a member of the Metropolitan Board of Works. ——Sir J. M'Garel Hogg said that one of the members of the Board had a share in the undertaking.

Society for the Protection of Ancient Buildings.—On Wednesday afternoon the sixth annual meeting of this Society was held in the hall of the Society of Arts, John-street, Adelphi, Sir John Lubbock in the chair. The report, which was read by Mr. William Morris, gave a list of about 120 ancient buildings in this country, besides nine abroad, in reference to which the Society had taken steps during the past year, either to induce those in charge of them to perform some necessary repairs, or to protest against such falsifications of old work as were often called "restorations." Among the instances treated more at large in the report some stood out very prominently. Such were the continued "restorations" at the Tower of London; that going on in depravation of the largest parish church in England, St. Nicholas's, Great Yarmouth; at Peterborough Cathedral; at Croydon Palace; at St. George's Chapel, Windsor; and at Hampton Court Palace. In foreign countries a considerable portion of the Society's work in the past year had been devoted to the monuments of Arabart, in Egypt, and to various Italian buildings, such as the Monastery of Ara Cœli at Rome, the Mercato Vecchio and the Ponte Vecchio, in Florence, with other buildings. Mr. Vernon Lushington moved the adoption of the report. The motion was seconded by Lord Houghton, who remarked on the two things wanted—the prevention of our old buildings from perishing by decay, and their repair without defacement. To solve the problem artistic taste and historical knowledge were alike indispensable. Instances of complete success were rare. The report was adopted, and on the motion of Mr. R. S. Poole, a resolution in favour of the measure now before the House of Commons for extending the principle of Sir John Lubbock's Act so as to embrace monuments of a later date, was passed.

The Somersetshire Archæological and Natural History Society.—The thirty-sixth annual meeting of this society has been fixed to take place at Wiveliscombe on the 21st August, under the presidency of Mr. W. E. Surtees, D.C.L. The meeting will extend over three days. On the first day the society will explore the archæological treasures of Wiveliscombe, and in the afternoon a drive will be taken by Clayhanger and Huish Champflower. On the second day Castle Roch Gaulden, Lydeard St. Lawrence, and Raleigh's Cross on the Brendon Hills will be visited. The members on the third day will proceed to Dulverton, and drive to Brushford, Tall Steps, Combe House, Batlynch, and Burston.

Bethnal Green Free Library.—The committee of the above institution have published a statement to the effect that after seven years' incessant labour they have secured a valuable collection of books, magazines, &c., numbering about 17,000 publications, all of which have been presented by generous donors, including the Prince of Wales, the Duke of Edinburgh, the Duke of Albany, the Princess Beatrice, and other members of the royal family; authors and editors, firms and publishers, societies and institutions, including the University of Oxford, and several departments of State. The books, &c., are deposited in suitable premises, which include the library, newspaper and magazine room, ladies' reading-room and lecture-hall, and which have been erected at a cost of 5,000*l*. The library was opened to the public on the 22nd of December, 1881. The expense for shelves, cases, &c., for these works, which has been considerable, has been met by the contributions of liberal donors, but additional funds are needed to accommodate the large number of volumes, reviews, journals, and magazines that have been recently donated.

Water-Supply at Gloucester.—It is announced that until further notice the city water-supply will be shut off from eleven o'clock at night until six o'clock in the morning. In reviving this system of intermittent supply the authorities have taken a retrograde step. It is now well recognised that the intermittent system of supply is fraught with danger, owing to the fact that the water remaining in the pipes after the communication with the reservoirs is stopped becomes charged with foul matter by the leakage inwards of mud, polluted water, sewer gas, &c. The authorities of the city plead that the intermittent system is necessary to be carried out owing to the supply at Whitcomb being insufficient to meet the average daily consumption of 30 gallons per head. It is contended that 30 gallons per head per day for Gloucester is an excessive allowance, and that by means of the waste-prevention meter invented by Mr. Deacon, the Liverpool Water Engineer, and by inspection of these meters, the quantity per head could be reduced to 20 gallons per head per day.

The Metropolitan Board and the Theatres.—At the meeting of the Metropolitan Board of Works on the 1st inst., the report of the Building Act Committee recommended that the application of Messrs. Spiers & Pond (Limited) for approval by the Board of the drawings of the proposed alterations at the Criterion Theatre be granted, on condition that a certain apartment were converted into a crush-room in connexion with the proposed new staircase leading into Piccadilly. The recommendation was approved by twenty-nine votes to six. The committee also reported that, having regard to the many and serious structural defects of the Cirque in Argyll-street, Regent-street, they were of opinion that it was not a fit place for public entertainment. The report was adopted.

The Liverpool Cathedral Movement.—The next meeting of the sub-committee appointed to report as to the selection of a site for the proposed cathedral for Liverpool will be held on Tuesday, the 19th inst., when a large amount of tabulated information respecting the quantity of land the cathedral should actually occupy, embracing all the necessary surroundings, will be submitted and discussed. The sites committee will meet on the following day, to consider the report of the other committee. It is stated to be the opinion of the committee that before any site is finally decided upon the architect who is to be entrusted with the construction of the building shall have some voice in the matter.

An Alpine Village.—A bazaar of this character will be held on Thursday and Friday next, from 2 to 10 p.m. in the Chelsea Vestry Hall, King's-road, in aid of the extension of St. John's Hospital for Diseases of the Skin. The Countess of Cadogan will officiate, supported by H.S.H. the Duke of Teck (president of the Hospital), Sir Spencer Wells (president of the College of Surgeons), Lady Brassey, Sir Charles Dilke, Sir Charles and Lady Freake, &c.

Wrought Ironwork.—Messrs. Jones & Willis have just completed a series of six wrought-iron grilles for spandrel-spaces in the upper part of the carriage-porch of a large mansion now in course of erection near Dundee. Between each pair of spandrel pieces there is a large rose or boss. The design and workmanship are such as to reflect credit on the firm.

TENDERS.

For reservoir, cooling-pond, &c., at Goldstone Bottom, for the Brighton Waterworks. Mr. E. Easton, engineer:—

Nowell, Shepherd's-bush	£18,600 0 0
J. Anscombe, Brighton	14,783 14 4
J. Jackson, Westminster	13,498 0 0
Dickinson, Bermondsey	14,320 0 0
G. Lockyear, Brighton	14,285 0 0
J. Marshall, Brighton	14,094 0 0
G. Cheesman, Brighton	13,940 0 0
R. Peters, Horsham	13,800 0 0
Hill Bros., High Wycombe	13,316 2 0
Harrison, Brighton	13,296 0 0
Longley, Crawley	12,809 0 0
Beadell Bros., Erith	12,276 0 0
Oliver, Brighton	12,230 15 0
G. H. Denne, Deal	11,578 0 0
Hayter, Portsmouth	11,282 0 0
J. Chappell, Pimlico	10,996 0 0

For farm buildings at Mote Farm, Ash-next-Sandwich, for Mr. W. Hammond Solley. Messrs. Fry & Broad, architects:—

Smith & Son, Ramsgate	£1,465 0 0 !
Lewes, Dover	889 10 0
F. Fetherstone, Littlebourne	790 15 0
J. Bourne, Dover	776 0 0
H. Stiff, Dover	767 0 0
Jackson, Dover	765 0 0
J. Wise, Deal	750 0 0
J. Petts & Son, Walmer	749 0 0
Richardson, Dover	749 0 0
A. Brisley, Ash	747 0 0
Hayward	720 0 0
Halton	720 0 0
W. J. Wiles, Dover	700 0 0
J. Welsh, Dover	698 0 0
G. H. Denne, Deal	678 0 0 !

For the new Lenton Boulevard, for the Corporation of Nottingham. Mr. A. Brown, Borough Engineer:—

Scott, Wigan	£34,400 0 0 !
Hampshire, Lincoln	33,600 0 0
Kirk & Parry, Sleaford	29,214 0 0
P. Smith, Manchester	28,088 0 0
T. Smart, Nottingham	23,968 0 0
J. Dixon, St. Albans	23,994 0 0
Tomlinson Bros., Derby	22,519 0 0
Forster & Barry, Nottingham	22,073 0 0
J. Knight, Loughborough	22,067 0 0
G. Smith, Newcastle-on-Tyne	21 074 0 0
Kellett & Bentley, London	19,985 0 0
Meat Bros., Nottingham	19,580 0 0
S. Thumbs, Nottingham	19,461 0 0
W. Cordon, Nottingham *	18,612 0 0 ?

* Accepted.

For alterations and additions to house at Orlingbury, near Wellingborough, for Mr. J. Nunneley. Mr. Edward Sharman, architect:—

G. Henson	£750 0 0
Lewis & Simpson	738 16 6
Underwood	689 19 0
Ward & Saxby	685 0 0
S. Abbott	666 15 0
G. Munday	658 5 0
Geo. H. Green (accepted)	655 10 0

For boys' day rooms and school-mistress's cottage, and other works, for the Managers of the Central London District Schools at Hanwell. Mr. George Judge, architect. Quantities supplied by Mr. W. H. Brayshaw:—

E. Grover, Ealing	£9,080 0 0
H. Miller, London Fields	8,800 0 0
W. T. Niblett, Highbury	7,730 0 0
Eyears & Sampson, Westminster	7,600 0 0
J. W. Sawyer, Clapham	7,553 0 0
McCormick & Son, Canonbury	7,389 0 0
G. Parker, Peckham	7,334 0 0
H. R. Swain, Barnsbury	7,279 0 0
G. Gibson, Southall	7,255 0 0
W. Oldrey, Westbourne Park	7,000 0 0
T. Boyce, Hackney	6,843 0 0
W. Brown, Southall	6,758 0 0
Lucas & Son, Kensington	6,405 0 0
H. Haynes, Harrow	6,100 0 0
Priestley & Gurney, Camden Town *	5,940 0 0

* Accepted.

For the erection of a villa residence at Clacton-on-Sea, for Mr. Robert Blackie, exclusive of fittings, bricks, sand, and gravel found on the estate. Mr. T. A. Cressy, architect:—

Wood	£1,299 0 0
Salmon	1,190 0 0
Demand	1,090 0 0
Saunders & Son (accepted)	1,070 0 0

For the erection of a house for Mr. T. R. Marshall, Manor-road, Bournemouth. Messrs. Kemp-Welch & Pinder, architects. Quantities by the architects:—

Hoare Bros. & Walden	£2,930 0 0
Stroud	2,894 0 0
G. James	2,880 0 0
J. McWilliam	2,853 0 0
H. Ware	2,650 0 0
Jenkins & Son (accepted)	2,648 0 0

For new roads for the British Land Company, Limited, on their estate at Barking, Essex. Mr. Henry B. Michell, surveyor:—

W. Harris, Camberwell	£700 0 0 !
H. W. Keeble, Regent's Park	567 0 0
Jas. Pizzey, Hornsey	499 0 0
J. Jackson, Leyton	488 0 0
J. Bloomfield, Tottenham	460 0 0
E. Wilson, Walthamstow	445 0 0
Peill & Sons, Bromley, Kent (accepted)	399 0 0 !

For the erection of stables, Oxford-road, New North-road, for Mr. E. Dex. Mr. H. B. Riddle, architect:—

Johnson & Co. (accepted)	£316 0 0

For dwelling-house and business premises for Mr. J. W. Smith, draper, High-road, Streatham. Mr. Frederick Wheeler, 119, Cheapside, architect:—

Hill Bros., Streatham (accepted).

For the erection of farm buildings, stables, bailiff's cottage, lodges, and alterations and additions, to the house on the Flimwell Estate, Flimwell, near Hawkhurst, Kent, for Mr. Thomas Doubble, St. Peter's, Isle of Thanet. Mr. E. L. Elgar, architect, Ramsgate, Kent. Quantities by Mr. J. Rookwood :—

Elwig, Tunbridge Wells	£8,210	0	0
Austen, Tonbridge	7,597	0	0
Punnet & Son, Tonbridge	7,443	0	0
Balcombe, Ticehurst	6,820	0	0
Martin, Ramsgate	6,800	0	0
Port, Ramsgate	5,989	0	0

For alterations, additions, and reparations to premises, Nos. 126 and 127, High-street, Guildford, for Mr. J. Cable. Messrs. Peak, Lunn, & Peak, architects :—

Edwin Elliott, Guildford	£498	0	0
G. & R. Smith, Guildford	490	0	0
George Strudwick, Guildford	440	0	0
Thos. E. Downes, Guildford	388	0	0
Billimore & Smith, Guildford *	354	19	10

Accepted.

For alterations and additions to cottage residence, Gosden, Bramley, near Guildford, for Mr. F. E. Eastwood, J.P. Messrs. Peak, Lunn, & Peak, architects, Guildford :—

Mitchell Bros., Shalford (accepted)	£382	18	0

For rebuilding premises, No. 94, Drury-lane, for Mr. J. Williamson. Mr. James M. Cable, architect :—

Cox, Beckenham	£1,375	0	0
Williams, Pimlico	1,320	0	0
Holloway Bros., Battersea	1,276	0	0
Richardson Bros., London Wall	1,248	0	0

For a village church near Warrington, Cheshire. Mr. George Truefitt, architect :—

Patterson	£2,799	0	0
Neill & Sons	2,545	0	0
Southern & Sons (accepted)	2,485	0	0

For alterations in Monnow-street, for the Mayor and Corporation of the borough of Monmouth. Messrs. Muggeridge & Powell, architects. Quantities supplied :—

Davis, Cardiff	£1,402	0	0
Simmonds, Monmouth	1,243	19	0
Welsh, Hereford	1,194	0	0
Charles, Monmouth (accepted)	1,057	0	0
Bamfield, Monmouth	1,000	0	0
Morgan, jun., Monmouth	987	0	0

For the erection of pair of villas at Fellowes-road, South Hampstead, for Mr. A. W. Bayes. Mr. E. W. Hudson, architect. Quantities by Mr. G. J. Poole :—

Gregory & Bence	£3,396	0	0
Thomas & Butland	3,364	0	0
Gould & Brand	2,830	0	0

For additions to Mr. H. Clarke's house, Tavistock-street, Bedford. Mr. John Day, architect :—
Corby & Son, Bedford (accepted).

For a pair of wrought-iron gates and palisaded fence, York stone coping to wall, and steps to churchyard, Doulting stone caps, hanging stones, quoins, &c., to gate-piers for the western boundary fence, St. Peter's Churchyard, Bedford. Mr. John Day, architect :—

Masons' Work.

Garlick, Bedford	£85	0	0
Jarvis & Son, Bedford	63	16	0
Osborne, St. Neot's	61	15	0
Steers, Bedford	59	0	0

Smiths' Work.

Kilpin & Billson, Bedford	£52	10	0
W. B. Baker, Bedford	50	0	0
E. L. Moulton, Bedford	45	0	0
Page & Co., Bedford	37	15	0
W. Day & Sons, Bedford	33	0	0

For new Wesleyan Chapel at Everton Heath, exclusive of bricks, lime, and sand for the brickwork, for Captain Dennis. Mr. John Day, architect :—

S. Osborne, Eaton Ford (too late)	665	10	0
Foster, Kempston	£650	0	0
Wade & Edey, St. Neot's	590	0	0
Page Bros., Buckden	540	0	0
Woodman, Potton	517	0	0
Bartle, Potton (accepted)	501	11	9

For the alteration to stabling and decoration to residence of Mr. F. H. Birley, Lingfield, East Grinstead. Mr. C. J. C. Pawley, architect, 26, Moorgate-street :—

Smith & Sons, South Norwood	£405	0	0
Hollidge & Stuart, South Norwood	357	0	0
Turtle & Appleton, Wandsworth	323	0	0
H. Ridley, Lingfield (accepted)	283	0	0

For turret, new south transept, chancel aisle, and octagon vestry to the Church of St. John, Great Yarmouth. Messrs. Bottle & Olley, architects :—

James Leggett (accepted)	£1,365	0	0

For building Ifield Police Station :—

H. Terry, Storrington	£813	0	0
G. Bidgood, London	795	0	0
Etheridge Bros., Horsham	778	0	0
Redford & Potter, Horsham	741	0	0
R. & F. Parsons, Brighton	730	0	0
John Woolgar & Sons, Horsham	720	0	0
R. & C. Gates, Crawley	694	0	0
John Morris, East Grinstead	670	0	0
P. Peters & Co., Horsham	658	0	0
James Longley, Crawley	630	0	0
Richard Cook, Crawley (accepted)	615	0	0
Pannell Bros., Horsham	599	0	0
Priestley & Gurney, 42, High-street, Camden Town	594	0	0

For additions, &c., to Independent Wesleyan Chapel, Wellingborough. Mr. Edward Sharman, architect :—

J. Hull	£692	0	0
G. Henson	570	0	0
Marriott	540	0	0
Hacksley	534	7	0
Underwood	500	0	0
G. H. Green (accepted)	457	5	0

For additions and alterations to Board Schools, Wellingborough. Mr. Edward Sharman, architect :—

J. Underwood	£1,910	0	0
E. Brown	1,896	5	0
G. Henson	1,850	0	0
T. Harrison	1,769	0	0
R. Marriott	1,749	0	0
Geo. H. Green	1,710	0	0

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